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JULY TEN THE INTRIBULAST METWORK PARTY 2015

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**THIS ISSUE:** Enjoying great music in great sound has never been so easy or affordable.

#### Are you still into that sound stuff?

decade ago, my mother, on noticing a copy of Stereophile on my kitchen counter, asked me, "Are you still into that sound stuff?" Her tone had a touch of exasperation.

"Geez, Mom. I've been an audiophile for 15 years. This isn't a phase I'm going to outgrow."

Instead of motherly empathy, I got a slight smirk and a retort: "But it's always the same thing."

Until recently, I'd begun to think that Mom may have had a point: The audiophile pursuit—mine, at least—was beginning to feel a bit *samey*: Get tired of component A, buy a possibly better-sounding, likely more expensive component A to replace it. Do the same for components B through D, then repeat all steps until you hit the inevitable ceiling: You just can't get yourself to pay *that much more* for the next precious iota of better sound. Then wait it out in this audiophile neutral zone until a good deal for something from the A-through-D list comes along to jumpstart the process all over again.

I was there, in the upgrade inertia of the neutral zone, when it dawned on me that not only had I been missing the big picture—I had also, in some visceral way, been *resisting* it.

The big picture is this: There have never been so many different *ways* to indulge in great sound. We have never, in our hobby's history, had it so good. This is thanks to the serendipitous confluence of three musically relevant forces:

**OPTION:** About a year ago, my global *serious-listening* home music network consisted of exactly one stereo system, bound by design to one area: my basement man cave, on those days my wife wasn't at the other end of it doing laundry. And if that image doesn't strike you as quaint, depending on where I was standing when the mood hit, [grumpy old man's voice:] I used to have to walk dozens of feet, sometimes down two flights of stairs, to reach that semi-dedicated space below ground.

Not that doing so was a chore. Making the trek downstairs reminded me of the slogan from that vintage ketchup commercial, or sex: Part of the pleasure was the *anticipation* of a payoff just around the corner—and in this case, the climax was ensconcing myself in a ratty orange couch that served, for an hour or two, as the driver's seat of my own musical time machine. That dank, dimly lit room was special, in large part, because of its singularity.

I don't miss it. I mean, I don't have to—my basement stereo is still there. But I get great sound in more places now, often within arm's reach of where I happen to be—in my home office, TV room, or kitchen. Sometimes, it's as close as *on my person*, in the form of a PonoPlayer strapped to my belt, ensuring me a connection to high-resolution sound even if I've locked myself in a closet. *Vive la différence*, I say.

As with each of the following forces, this first one, powerful as it is in its own right, would be significantly less so without the support of the other two. And here is where that serendipitous confluence comes into play to, as the

Dude might say, tie it all together.

SOUND QUALITY: In 1980, Blondie, Pink Floyd and Olivia Newton-John dominated the *Billboard* singles chart, while the LP had two more years to go before its own dominance as a music medium would soon be yanked away. And while TV's *The Jeffersons* were movin' on up, the sound quality of mainstream hi-fi was stuck in a rut: rattling 4-track cassette tapes were booming, and 99.9% of household stereos, bought along with other home furnishings at department stores, consisted of transistor receivers with tinfoil cases and plastic parts that popped off a month after purchase, and speakers so flimsily constructed their cones vibrated out what little of the recording was left. Compared to then, today's *crap* sounds stunningly lifelike. But even by more modern standards, audio quality keeps making strides across the board: CD players, DACs, big and small speakers,

Even by more modern standards, audio quality keeps making strides across the board. computer audio, you name it—the ratio of good-sounding gear to distortion-spewing duds has never been so great.

CHEAPITUDE: Nowadays there's no need to resort to scheming to fund a slice of the hi-fi pie, or to relegate ourselves to the upgrade

inertia of the neutral zone, when audiophile sound can be had at average-Joe prices. My \$300, Tidal-streaming Audioengine B2 speaker in the kitchen is proof of that, as are my \$125/pair(!), general-purpose Pioneer SP-BS22 speakers and my Audioquest/Moon Audio/Noontec computer headphone set-up at \$450, about the price of a camping tent for four. But unlike my tent, which ended up being one of those "good ideas unfulfilled" purchases, my computer rig, which I use every day, comes up tops in another category, the one titled: cool stuff worth every penny I spent, and then some.

The times they may be a-changin', but I believe they bode well for audiophiles. In terms of playback gear, we're at a historic juncture of quality, price, and options. We can now own several different sources of superior sound reproduction for what it used to cost to install just one in a dedicated listening room. Plus, there's that other thing that makes my heart tingle again: the anticipation of what's coming up next, just around the corner from where we're all standing now.

Sure, the prospect of venturing into this strange, newish audio frontier can seem a bit daunting. But I choose to do it anyway. As far as I'm concerned, there has been no more exciting time to be an audiophile since those glittering first years when it all felt cutting-edge to me.

Robert Schryer (Stletters@sorc.com) believes that the perfect sound system exists only in heaven, but he's in no rush to hear it. He lives in Montreal.





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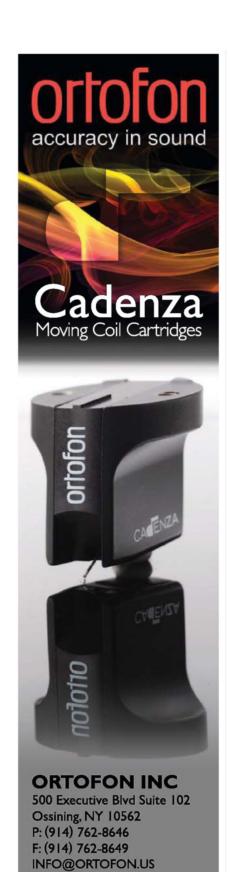
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#### LETTERS FEEDBACK TO THE EDITOR

TAKE HEED! Unless marked otherwise, all letters to the magazine and its writers are assumed to be for possible publication. In the spirit of vigorous debate implied by the First Amendment, and unless we are requested not to, we publish correspondents' e-mail addresses.

#### **RIP Robert J. Reina**

Editor:

I was saddened to learn of the death of Robert J. Reina. He was one of my favorite *Stereophile* writers. My condolences to his family. I really enjoyed his reviews of affordable loudspeakers. He will be missed.

—Joe Mitchell

joemitchell777@yahoo.com

#### **Robert Reina**

Editor:

He was one of my favorite writers. His approach was very logical and, perhaps more important, consistent. —*Chris Kline telwirecpk@gmail.com* 



#### **Bob Reina**

Editor:

I want to express my condolences to the staff of Stereophile and to his family on the death of Robert J. Reina. I was deeply saddened to hear the news of his death. Bob was an excellent reviewer, and I always felt he spoke to the reader directly, indicating his concern for the potential buyer of audio products. His speaker reviews were most memorable because Bob had a precise system of evaluation, comparing previous speakers he had reviewed with newer models from different manufacturers. He was always impartial and fair in his conclusions, and did not thrust his viewpoints on the reader. He will be sorely missed, as will his marvelous ability to share his enthusiasms for music and sound. -Lawrence A. Novelli

-Lawrence A. Novelli novelli@sbcglobal.net Robert J. Reina passed away on March 27. A remembrance was published in the June issue of Stereophile (p.15); a shorter version can be found at www.stereophile.com/content/robert-j-reina-rip.—John Atkinson

#### Youth is wasted on the old

Editor:

Without rhyme or reason, I begin reading *Stereophile* with either "As We See It" and read front to back, or, as was the case with the April issue, with Robert Baird's column and read back to front (being left-handed, I can do that).

I suspect that Robert and I are not too far apart, age-wise, and found myself in agreement with his comments. Growing up in the 1960s with the advent of FM radio, it was easy to be exposed to new music, and so much of it was so good, with so much diversity. Today there is still good/great music being performed—it just has to be ferreted out. My wife and I became huge fans of Wilco after I bought Sky Blue Sky because I'd read a review of the album by Timothy Flynn, of the Kansas City Star—so much so that when we missed them here in KC, we flew to see them at the Savannah Music Festival the following spring. I would put Jeff Tweedy up there with any songwriter from the '60s.

After finishing Robert's column, I continued my march toward the front, and stopped at Record Reviews, specifically of She & Him's *Classics* (p.183). Been listening pretty much for the best part of an hour or so.

I've been a subscriber to Stereophile longer than I can remember (really, I can't remember), and it just hit me why I remain a subscriber. It's not the equipment reviews, because most of the gear I can't afford. I remain a subscriber because I enjoy reading you and the other contributors to Stereophile. I was disappointed

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when that young whippersnapper Mr. Mejias moved on, and saddened to hear that Sam Tellig and Wes Phillips had departed *Stereophile*. I believe that music is like life in that it's about relationships. We develop relationships with others throughout our lives, and are enriched by doing so. For those of us who love music, it is a relationship with the music that also enriches our lives. *Stereophile* has contributed to that enrichment, and I thank all of you for that. —*Patrick D. Laughlin yardbirdpat1776@yahoo.com* 

#### **Our Master's Voice**

Editor:

Robert Baird's "Our Master's Voice," in the May issue, was a diverting read, but I did find his overall premise and situational diagnosis incorrect—he is certainly wrong to presume that, for anyone under 50, CDs have been replaced by downloads. Perhaps for anyone under 20 and currently in college, this could be the case. But as people get older, they also tend to get smarter.

Though I am 40, I neither have nor strive to have a proper library of music downloads. I still buy CDs and records: Either because I am too familiar with computers, or perhaps because I studied classical piano and happen to have absolute pitch, I never bought into MP3s, and have lost enough files (not just music) to hard-drive failures to also know better. I do not even mention the current illegality of file transfers (of course, everyone does it and no one admits to it).

The point is, *any* physical media is better for *ownership* and *storage* purposes. If you insist on playing digital music files because of convenience of usage, sure—you can always re-rip your CDs or vinyl to the latest format du jour: FLAC, or MQA, or . . . Any well-informed music lover—at least, this is the case among my friends—is aware of the speed of evolution of various codecs, and therefore buys physical media like vinyl, CDs, and even cassettes (and goes to concerts, as there is no substitute for live music, of course).

So, I'll leave buying digital music files to either the super-rich who do not mind buying the same stuff over and over again, college kids who care not for the quality of their music, or to audiophile idiots eating up the next digital manna

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(now it's MQA's turn).

Thinking of it, Robert's article is wrong at its very core: Those who own original Edison cylinders or Berliner discs will do well to hold on to those artifacts. as their value will only increase. Nothing of the sort can ever be said of a digital file, because a digital file has no inherent value whatsoever! It's like with books-printing a book costs money, while selling you a digital copy to be read via a Kindle is pure profit for the seller. I'll buy a paper book, if only because I then actually own it-I can sell it, or do whatever I wish with it-but most important, because I enjoy reading a printed page more than reading a tablet screen.

As for Robert's article, I think his perspective is a bit too engrossed, too entangled in the professional music scene. As the saying goes, he no longer sees the forest for the trees. —Yory Teperman yory.teperman@gmail.com

#### Groovy

Editor:

Art Dudley provided an engaging review of the Audiosysteme ultrasonic vinyl cleaner in the March issue ("Listening," p.31). I take no issue with the substantive points, but in case anyone scoring at home is wondering about the numbers he provided for the size of record grooves, let me provide some clarification.

When Art said that the groove width was about 25 microns (25µm), he may have been referring to the stylus contact area within the groove. The grooves themselves are cut a bit larger, to allow a little safety margin in tracking. A modern stereo record is cut with a system that can vary the width of the groove, deepening it when there is substantial vertical motion of the stylus so that the minimum groove width is maintained. (We are concerned with groove depth, but we normally talk about groove width, since it is so easy to measure looking through the microscope. There's a direct relation between the two, so it's just as easy to talk in terms of width.)

A normal width for quiet grooves would be two mils, or about 50µm. When the music gets loud, and especially when it includes low-frequency information that differs between the stereo channels, the result is a substantial vertical component of the stylus motion. Then the deepening system comes into play and the average groove width might get up to seven mils, or 177µm.

–Paul Stubblebine Paul Stubblebine Mastering San Francisco, CA

#### Sam and the Paparazzi

Editor:

I was hoping for a more substantial appreciation of Sam Tellig's contributions to *Stereophile* than the note that appeared in the March issue (p.19). Lately, I have tended to purchase on the newsstand only those issues of *Stereophile* in which an edition of "Sam's Space" appeared.

I had been headed down the same path Mikey Fremer seems to be on—of owning ever more expensive, bulky, and heavy (in the wrong sense) gear that, moreover, becomes obsolete at a dizzying pace as manufacturers introduce upgrades and new models—but found myself increasingly unable to listen through the sonic signature of the class-AB bipolar transistor amplifier I still own, to experience a sonic illusion

# For those of us who love music, it is a relationship with the music that enriches our lives.

of hearing real music. This is notwithstanding the fact that said amplifier was listed in Class A of "Recommended Components" for several years and was a contender for "Product of the Year (Amplifiers)" when it was in current manufacture. Possibly, this is an example of LFD's Dr. Richard Bews's contention, as quoted in "Sam's Space" in July 2014, that "when circuits are not optimized, solid-state often sounds grainy and lacks extension in the top end and possess[es] poor dimensionality." Having heard for myself such sound properties from two highly regarded amplifiers I have owned, contrary to Sam, I would not have called this poppycock, ever.

Meanwhile, particularly in his descriptions of the reproduction achievable with his cherished Sun Audio SV2A/3 at the heart of a system, Sam was describing everything my expensively assembled music system seemed to be missing: harmonic richness, generosity of tone, truth of timbre.

So, instead of handing over a chunk of change for more of the same (to be fair, I did have a Naim NAP500 on loan for a while, and thought it excellent), I bought my own single-ended triode 2A3 amplifier (not a Sun, though) at an Audio Jumble Sale. I initially intended to give it a try driving Stax headphones,

half expecting that 3.5W would prove a miserable failure in a real-world listening environment. But having been bowled over by what I heard, I acquired a pair of crossoverless, single-driver speakers that the good fellas at Walrus advised might be compatible. This match has formed the nucleus of my playback system ever since. Sadly, I understand that Walrus appears to be headed the same way as "Sam's Space"; if so, this will be an important loss to London audiophiles of the analog and tube persuasions.

Responses to my reconfigured system have been wholly positive: A speaker manufacturer who visited my home suggested I connect the 2A3 to my big speakers, an iconic model the provenance of a different manufacturer: "It won't play very loud but it will sound great." A sound engineer and part-time drummer brought some of his own gear around to conduct comparisons, and commented that, "By the same margin that my gear beats everything else I've heard, your setup beats mine. If it became widely known that such great sound could be had for such little money, everybody would be buying this stuff." He was especially taken with the bass, suggesting that, following Dr. Bews, this particular tube circuit is "optimized."

I was at one time acquainted with a group of freelance photographers. Having heard my system, a few of them, too, were bitten by the hi-fi bug. Sam will laugh his evil laugh at this-he was not the youngest writer on the staff, and listens to Bing Crosby-but I had these sharp-eyed, opportunistic young men (paparazzi) buying Stereophile every month to read his latest musings. In the process, they discovered that you can have great sound, just not a lot of it, for not a lot of money, and that small rooms can be a boon (not a boom). John Atkinson has recently caught on to the Triangle sound. Inspired by Sam, some years ago these young folks were buying up Triangle speakers in particular and, pace Sam, pronouncing it Tree-ang-le. A caveat is that I found Sam's most recent phase, summed up as "convenience trumps sound quality," less interesting than earlier phases, although his writing remained captivating.

These days I don't alter my system as much, and the ratio of live to recorded sound in my listening mix has dramatically increased. But I expect that I'll continue to be an interested reader of *Stereophile* from time to time.

—Graham Boyd gp.boyd@btopenworld.com

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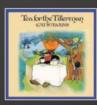
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### INDUSTRY AUDIO NEWS & VIEWS UPDATE

**SUBMISSIONS:** Those promoting audio-related seminars, shows, and meetings should e-mail the when, where, and who to JAtkinson@ enthusiastnetwork.com at least eight weeks before the month of the event. The deadline for the September 2015 issue is June 20, 2015.

#### UK: VINYL

#### Paul Messenger

My smugness rating continues to increase with regular news items about the serious revival of the vinyl LP in the UK least. Virtually coincident with the celebration of Record Store Day 2015, on April 18, comes the news that the UK sales charts for vinyl singles and albums are being resuscitated, many years after the LP was widely regarded as all but dead, buried, and consigned to the pages of history.

I've hung in with vinyl all along. I'd been collecting LPs for 20 years before the arrival of the CD on these shores, in 1984, had a very decent-sounding record player, and wasn't prepared to replace all those LPs with CDs—especially as, in the 1980s, black discs were significantly cheaper.

# Vinyl sales might still comprise only 1.5% of total record sales, but the rate of growth has been spectacular.

Vinyl sales might still comprise only 1.5% of total record sales, but the *rate* of growth has been spectacular: 1.5% is 15 times the 0.1% recorded in 2007, the year of the first Record Store Day. Plenty of other statistics confirming similarly dramatic growth rates can be found by trawling the Internet. The reason for the resurgence seems to have much to do with the urge to

build a more permanent collection of recordings than is possible with downloads or, especially, streaming, and for that purpose, the LP is the prestige format. Drawing parallels with the book trade, Bob Stanley commented, in *The Guardian*, "a vinyl record has the cultural weight of a hardback." <sup>1</sup>

Stanley noted in the trend the significant preponderance of males in both the artists releasing singles on vinyl and their likely purchasers, citing as an example the appearance of only one female performer in the vinyl Top 40 singles: Lulu's hit version of the Isley Brothers' "Shout," from way back in 1964. However, even back then, I regarded the singles chart as of only academic interest, and had already moved on to albums. In any case, the charts for sales of albums on vinyl look far more interesting: nearly all the top 20 LPs are relatively new releases from indie acts little known to yours truly; "classic" albums from the likes of Led Zeppelin, Pink Floyd, the Beatles, and Fleetwood Mac tend to be down in the 20-40 region of the chart.

Given what might be the volatility of the dramatic growth in vinyl sales, it's difficult to predict how or if vinyl sales will continue to grow. While the format's basic survival now seems to be firmly reestablished, the availability—indeed, the serviceability—of record presses that may have been manufactured more than half a century ago might put the brakes on further expansion.

1 See www.theguardian.com/commentisfree/2015/apr/14/vinyl-revival-music-here-to-stay.

#### **UK: ABBEY ROAD, LONDON**Paul Messenger

Alan Dower Blumlein (1903–1942) is widely known as the main inventor of stereo sound recording, which he patented in 1931. But that was only one of his many accomplishments and inventions: During a relatively brief span of 13 years at EMI and its predecessors, he filed 121 patents. Blumlein's life ended prematurely with the crash of the airplane in which he was testing the H2S airborne radar system.

Primarily recognizing his achieve-

ments in sound engineering, the Institute of Electrical and Electronics Engineers (IEEE), a worldwide organization based in Piscataway, New Jersey, has awarded Blumlein its Milestone honor. A plaque, unveiled in the presence of Blumlein's son Simon and grandson Alan, will be permanently housed at Abbey Road Studios, in London. It was there that, in 1934, Blumlein recorded, stereophonically and direct to disc, Sir Thomas Beecham leading the London Philharmonic Orchestra in Mozart's Symphony 40,

#### CALENDAR OF INDUSTRY EVENTS

#### ATTENTION ALL AUDIO SOCIETIES:

We have a page on the Stereophile website dedicated solely to you: www. stereophile.com/audiophile-societies. If you'd like to have your audio-society information posted on the site, e-mail Chris Vogel at info@XLinkAudio.com.

Please note that it is inappropriate for a retailer to promote a new product line in "Calendar" unless this is associated with a seminar or similar event.

#### **ARIZONA**

Wednesday, July 29, 7–9 pm:
The Arizona Audio Video Club
will hold its monthly meeting at
a new location: Esoteric Audio, in
downtown Phoenix (111 W. Monroe
Avenue at First Avenue). We will be
listening to Esoteric's front-line audio
components, such as Aesthetix,
Boulder, Devialet, Focal, Magico,
Rockport, and VTL. Guests are
welcome and refreshments will be
served. For more information, contact
our president, Adam Goldfine, at
goldfineam@aol.com; or Esoteric
Audio, at (480) 946-8128.

#### **CALIFORNIA**

■ Sunday, June 28, 5-8pm: The **Los Angeles & Orange County Audio Society** will hold its monthly meeting at Monaco Audio Video (350 S. Lake Avenue, Suite 112, Pasadena). Larry Weiss and his colleagues will be on hand to feature premier products from **KEF**, including their signature speakers, as well as Parasound amps and preamps. Presenters from KEF and Parasound will speak, and there will be a surprise guest from a legendary loudspeaker manufacturer. **Eastwind Import** will be on hand to offer extraordinary LPs and CDs for sale. A raffle is planned and lunch will be served. Free parking is available at the back of the building. Members, guests, and visitors are invited. For more information, visit www.laocas.com or

CONTINUED ON PAGE 21





Far left: Alan Dower Blumlein was killed in an airplane accident in 1942 while testing airborne radar. Left: The IEEE plaque honoring Alan Blumlein will be on permanent display at Abbey Road Studios. Below: Blumlein's Trains At Hayes Station was the first motion picture to feature a stereo soundtrack.

"Jupiter"—the first stereo recording of an orchestra.

Besides stereophony, Blumlein invented the moving-coil disc-cutting head, so that EMI would not have to pay patent fees to Bell Labs for using Bell's Western Electric moving-iron head. In 1937, he patented the ultralinear amplifier circuit, and his name appears on the patent for another tube-amplifier innovation: the long-tailed pair circuit topology. He was also part of the EMI team that successfully developed electronic-scanning television in the 1930s, before the outbreak

During a relatively brief span of 13 years at EMI and its predecessors, Alan Dower Blumlein filed 121 patents.

of WWII and his move into radar research.

Few, if any, can match such an extraordinary list of achievements, especially ones that have had such a

huge impact on entertainment systems prior to the advent of computers—if anything, the IEEE's recognition of Blumlein is long overdue. On You-Tube, check out Blumlein's *Trains at* 



Hayes Station (1935), the first film with a stereophonic soundtrack, to hear the remarkable effectiveness of his invention.

#### GERMANY: FÜSSEN

Paul Messenger

For this year's High End show, held in Munich in May (see Jason Victor Serinus' report at www.stereophile. com), Harbeth Audio planned to introduce a new range of stands for its loudspeakers.<sup>2</sup> Handmade by Eva-Maria Weichmann and Ralf Sieg of Hifi-bauernhof in the small town of Füssen, in southern Bavaria, the stands are ecologically very sound—indeed, "green" to the core—and crafted in a labor-intensive process using sustainably sourced beech timber from German forests.

Everything about the Hifi-bauernhof stands is natural: the water-based glues are free from solvents, the coatings are oil and wax—even the tools run on power that is generated hydroelectrically. Rigidity is ensured by the use of traditional carpentry

2 See www.harbeth.co.uk/usergroup/showthread. php?2566-Stands-for-your-Harbeths.



skills, not glues, metals, or plastics. The packaging, too, is sustainably produced, and transport natural gas-powered. Hifi-bauernhof's principal, Dietmar Sutter, will donate a percentage of the profits to Rainforest Rescue and German conservation projects.

#### UK: SOHO SQUARE, LONDON

Paul Messenger

Clarity, the UK hi-fi industry's trade

organization held its 2015's annual general meeting at the screening theater of Dolby Laboratories' headquarters in London's Soho Square—a fine venue. The proceedings began with a demonstration of Dolby's relatively new Atmos sound system, which was very impressive in spatial terms, if played rather too loudly for my taste.

But impressive as the Atmos demo was, the main course was, as usual, the presentation by market researchers



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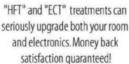


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Triton One with the sounds of speakers costing tens of thousands of dollars more
per pair says a lot about their level of performance ..." - Robert Deutsch, Stereophile



"A Giant-Killer Speaker ... Borderline Class A"

– Stereophile Magazine

Stereophile's Recommended Components Class A rating is their highest and most coveted honor. This year, for Class A Full-Range speakers, there were 12 honorees, ranging in price from \$16,000 to \$200,000 a pair, with an average cost of \$54,000. The fact that of all the 22 Class B Full-Range speakers, only one, the \$4999 a pair Triton One, was singled out and praised as, "Borderline Class A", is a very unique and significant honor, totally confirming its unique stature and achievement.

"An absolute marvel ... Triton One shames some speakers costing ten times as much."

- Caleb Denison, Digital Trends

The Triton One is an evolutionary speaker that builds upon all the advanced technologies that have made the Tritons mega-hits around the world. This new top-of-the-line flagship was engineered to deliver even better dynamics and bass than the extraordinary Triton Two, along with further refinement of all aspects of sonic performance. How well have we succeeded? In the words of HD Living's Dennis Burger, the Triton One delivers, "… the sort of upper-echelon performance that normally only comes from speakers whose price tags rival a good luxury automobile".

Triton One "creates visceral, tangible waves of pure audio bliss" – Dennis Burger, HD Living

Great sound is what it is all about and the Triton Ones are, as HiFi+'s Chris Martens raved, "jaw droppingly good ... one of the greatest highend audio bargains of all time with a dazzling array of sonic characteristics that are likely to please (if not stun) the finicky and jaded of audiophiles". The Ones were specifically engineered to excel with all types of music as well as movies. Best of all, they offer previously unheard of value, as Brent Butterworth wrote in Sound & Vision, "I heard a few people saying the Triton One sounded like some \$20,000-and-up high-end towers, but I disagree: I think they sounded better than most of them". Darryl Wilkinson summed them up best, "A Masterpiece ... GoldenEar has fully ushered in the Golden Age of the Loudspeaker". Hear them for yourself and discover what all the excitement is about.



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the GfK Group, whose Nick Simon and Lucy Twist described the ups and downs of the UK consumer-electronics scene. Although the UK doesn't celebrate Thanksgiving, in 2014, for the first time, we caught the US's Black Friday shopping bug. My decision to keep well away from shops last November 28 was vindicated that evening when I turned on my TV to see reports of near-riots. However, GfK's data also showed that, as many feared might happen, Black Friday shopping damped sales from then till Christmas.

More generally, however, GfK's surveys indicate that consumer confidence is now as high as it was a decade ago, before the beginning of the Great Recession, in 2008. This is mirrored by the fact that in 2014 consumer electronics overall actually began to grow again, led by domestic appliances, alongside new audio products such as soundbars and networked audio systems, plus TVs with ever-larger screens. However, portable players and home theater are both well down in monetary value while other wellestablished audio categories, such as headphones and iDevice docks, seem relatively static.

Much the same was true of hi-fi components: Whereas there was some decline in sales of traditional audio systems in 2014, this was effectively offset by the growth in network-connected systems. Sales of A/V receivers and speakers might have declined, but amplifiers and, especially, turntables showed healthy increases: respectively, 12% and 79%. To put the latter in context, the turntable renaissance is from a very low base, and in

part reflects a substantial increase in sales of low-cost, "old-style" record players: 2014's percentage of growth in units sold comfortably exceeds the year's growth in value. Nonetheless, it's a heartening for vinyl enthusiasts like yours truly. Other figures indicate that the premium-price end of the hi-fi separates market is holding up reasonably well, particularly for amplifiers, and that high-end CD players, too, are showing some market activity.

Though audio streaming is one of today's hottest topics, its biggest effect so far seems to have been on sales of soundbars and wireless speakers. An increase in sales of large-screen TVs plus steady erosion of the prices are two main reasons that while sales of soundbars and soundbases grew dramatically—80% in volume—in 2014 over 2013, the rise in value was just 43%.

The mass market for headphones stuttered in 2013, with sales volume down some 10% compared to 2012. Last year showed some recovery, 2014 registering a 2% increase in sales over 2013, and the trend seems strongly toward wireless Bluetooth models, especially higher in the market.

IT might seem peripheral to audio, but it's significant. Sales in the IT market in 2014 continued to concentrate on smartphones, tablets, and laptops, with only tiny contributions from netbook and desktop computers. Although IT sales remain pretty healthy, they seem to have peaked: In 2014, smartphone sales declined by around 1%, and tablets by 13%; only laptops bucked the trend in the UK, recording an increase of around 14%.

#### CONTINUED FROM PAGE 17

call Bob Levi at (714) 281-5850.

Sunday, July 26, 2–5pm: The Los
Angeles & Orange County Audio Society
will hold its monthly meeting at The
Source Audio/Video Design Group,
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comparisons and/or just enjoy the music. Included will be the world premiere of a new Focal speaker. Industry representatives will be on hand to discuss their brands, and Eastwind Import will offer for sale personally selected vinyl and CDs. A raffle is planned, and an extraordinary lunch will be served. Parking is free. Guests, visitors, and new members are invited. For more information, visit www.laocas. com or call Bob Levi at (714) 281-5850. Friday-Sunday, August 14-16: The California Audio Show takes place at the Westin San Francisco Airport, 1 Old Bayshore Highway, Millbrae, CA 94030. For more information, visit http://caaudioshow.com.



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### ANALOG BY MICHAEL FREMER CORNER

**THIS ISSUE:** Mikey is knocked out by the Swedish Analog Technologies tonearm.

#### The Best Tonearm in the World?

ate in the fall of 1982, Los Angeles turned ugly for me. I'd finished my work on *Tron* and despite the Academy Award nomination for Best Sound (which went to the mixing team, not the sound supervisor), it was obvious that nothing else was coming my way anytime soon. To earn a living, I had to reinvent myself.

So there I was in Las Vegas, at the 1983 Consumer Electronics Show, schlepping heavy bags filled with press kits, each containing an audio cassette of a dozen radio commercials for a car-stereo store that I'd voiced and produced, along with a résumé-bio and endorsements from clients.

Back then, car stereo was king. I walked around a huge exhibition hall filled with tricked-out cars, reading nametags. When I spotted one that read "FRED'S CAR STEREO, FARGO, ND" or "CAR STEREO SYSTEMS, SEARCY, AR," I accosted its wearer, made my pitch, and handed him a press kit. I'm sure most of those kits were tossed in the trash minutes later.

It was humiliating, and the rejections were rough on the ego, but it worked. I acquired enough clients to pay the bills and grow the radio-ad business I'd mostly abandoned when I moved to L.A. in 1979, to work on the film *Animalympics* (1980). So when, at an audio show, I'm accosted by an up-and-comer who can't afford a room or a booth, or who knows no one with whom he might even share an exhibit space, I try to be welcoming, and to at least listen to the spiel.

That's how I met Marc Gomez, of Swedish Analog Technologies (SAT). He approached me as I walked the show floor of High End 2014, in Munich, big black Pelican Storm case in hand. "Let me show you my tonearm," he said—not everyone's heard *that*, um, pickup line.

He hoisted the case atop a table, and opened it to reveal a *massive* tonearm prototype that looked almost larger than life. *An SME V on steroids*, I thought. As Gomez talked, it became obvious that I was staring at a very serious, well-thought-out design that was more about perfecting the known basics than inventing new ones based on questionable flights of fancy. Also obvious was an exquisite level of engineering precision and

attention to detail. Gomez made clear that his goal was not to produce a musical instrument capable of "sonic beauty," but rather a precision playback device devoid of a sound of its own—or, as Rockport Technologies' Andy Payor once described the ideal tonearm, "a reverse machine tool." Our encounter ended with my usual "Of course, I'd like to



It was immediately obvious to me that the SAT was easily, and by a wide margin, the finest, non-sounding tonearm I have ever not heard.

review it, blah blah blah."

My last words to Gomez took on greater import back in my hotel room, when I visited Swedish Analog Technologies' website. There I learned that he'd earned an MS in mechanical engineering and materials science, and that he was born in Barcelona, Spain, in 1972, and moved to

Sweden in 1999. While tonearm design isn't exactly rocket science, Gomez's résumé includes, among other design and development projects, the engine for Europe's Ariane rockets, as well as work on Porsche's Carrera GT, Rolls-Royce's water-jet engines, and components for Volvo and Saab.

But after years of working on projects for others, Gomez

decided to start his own business, and in 2010 chose to begin designing a tonearm—something that makes complete sense to *me*, though perhaps not to those still uninitiated into the Ways of Analog.

#### **Not Magic, but Science**

Gomez designed the SAT tonearm with the same computer-aided design and engineering tools he uses in his day job—much as Continuum Audio Labs' design team did when devising the Cobra arm. However, while the Cobra is made using 3D printing, Gomez leveraged his experience in the development and manufacture of composite materials to achieve his goal of high levels of rigidity and internal damping.

And, as did the Cobra's designers, Gomez decided on a 9"-long arm; he felt that this length provided high rigidity while keeping the arm's moment of inertia at more manageable levels, that the increase in tracking distortion produced by a short arm was "marginal," and that the inherently greater rigidity of a 9" arm would more than compensate for the slight increase in lateral tracking error.

On the SAT website's "Technol-

"Let me show you my tonearm," Marc Gomez said—not everyone's heard that, um, pickup line.

ogy" page, Gomez describes in great detail the costly, labor-intensive process required to produce the laminates used in the SAT arm, and the differences between the carbon-fiber composites he designs and manufactures and the thin walls of typical carbon-fiber armtubes, made of woven fiber, or with fibers that run only along the tube's longitudinal axis.

Gomez asserts that his laminates achieve much higher specific stiffness than any material used by other makers of tonearms, and claims that his armtube's first resonant frequency (not the same as the arm/cartridge system's resonant frequency) is 3.0kHz—which, he says, is also far higher than that of most tonearms. More important, he says, the amplitude of that resonance is extremely low.

Though Gomez chose to prioritize performance over appearance, the SAT

arm, dominated by its massive horizontal bearing yoke of stainless steel, is nonetheless visually appealing.

#### **Description**

The SAT tonearm's tapered armtube is made of pre-preg carbon fiber (*ie*, composite fiber material that has been pre-impregnated with a resin), cured by heat and pressure in an autoclave. It is manufactured in a single piece, from the headshell connector to the counterweight stub. A polymer sheath provides outer damping; three additional damping methods are applied inside the tube. Gomez says that carbon-fiber composites, and even wood, have significantly higher internal damping than metals such as aluminum, magnesium, titanium, or steel.

The SAT's unusually thick but light-weight headshell is built up from about 40 carbon-fiber plies. It's detachable, and can be rotated to adjust azimuth using the arm's reference marks: one on the headshell, three on the armtube. But while the headshell can be removed, there is no signal break where it joins the armtube, or anywhere from the cartridge clips to the low-mass, WBT NextGen RCA plugs. As in the



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**REGA** RP10 Turntable \$5,495



**AVID** Acutus Reference SP Turntable \$26,995



**PRO-JECT** Xtension 10 Turntable \$3,250

Kuzma 4Point arm, the SAT's wires and cartridge clips exit a front opening

in the armtube.

The SAT's standard cabling is a 1.2m length of instrumentation-grade, silver-coated copper conductor insulated with PTFE (Teflon). Other lengths, and types of cable and connector, are available on request. And for those who prefer absolute rigidity, and are willing to forgo the ability to adjust azimuth and the convenience of exchanging headshells with cartridges pre-mounted, Gomez offers the option of a fixed headshell.

The bearings are large-diameter, tungsten-carbide pivots resting on sapphire v-jewels. SAT includes a special tool so end users can adjust the vertical and horizontal bearings pre-loading, to eliminate any slack while keeping friction low. This means that the arm can be custom tailored to produce tighter coupling or lower friction, depending on the cartridge's compliance. Or, as is often the case when audiophiles gain control of critical adjustments—as when speakers come with easy ways for the owner to adjust their tweeter and midrange levels—they can royally screw things up. I'm not sure it's a

good idea to give obsessives control of such critical adjustments.

The SAT arm is dynamically balanced: Its vertical and horizontal rotational axes are both at the arm's center of gravity, which means that any angular acceleration around one axis will induce no torque in the other axis. When the arm rides a record warp, the cartridge's cantilever will not be deflected to one side.

Despite the high-tech materials, operating and adjusting the SAT arm are more traditional. The antiskating mechanism is a filament/weight system, the filament's looped end fitting over a tiny rod that protrudes from the side of the horizontal bearing housing, which is shaped like a flattened O. The filament rides on a thin, grooved cam attached to the top of this housing, then over a tiny wheel riding on an axle of equally small diameter protruding from the rear of the vertical bearing housing. A small weight attached to the free end of the filament produces the antiskate force. Supplied washers can be attached to the weight to increase the antiskate force.

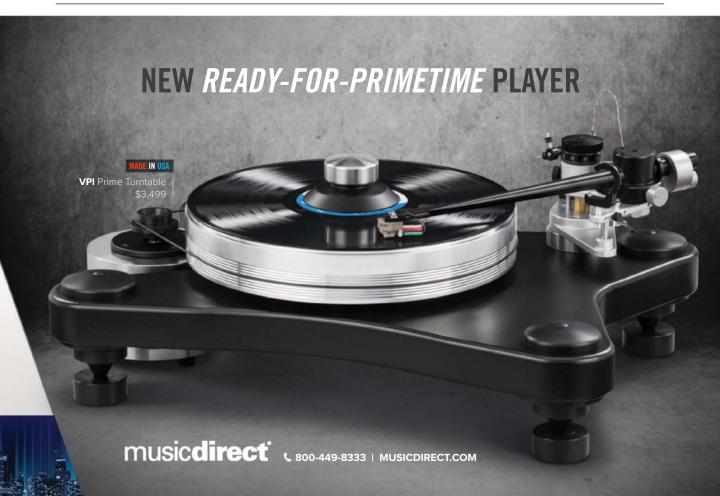
But while the antiskate system's mechanics look traditional, Gomez says

his design maintains "constant torque" across the entire surface of the record; many other system, he says, do not follow the actual geometrical variation of linear offset as the arm traverses an LP. While skating is affected by many uncontrollable factors—eg, degree of groove modulation, vinyl formulation, stylus profile, tracking force—Gomez says that consistency of antiskating torque across the entire LP side is still desirable and achievable.

The C-shaped vertical bearing yoke attaches to a massive stainless-steel pillar 40mm in diameter that is clamped within an equally massive aluminum base. Adjustments of vertical tracking angle (VTA) and stylus rake angle (SRA) are both made via a recessed, large-diameter screw with a knurled, indexed wheel, whose pointed bottom rests on the base.

To adjust VTA/SRA, loosen the base clamp. Turn the knurled wheel to raise or lower the arm pillar, then fix it before reclamping the arm. Numbers silkscreened onto the pillar allow you to accurately return to any previously selected height.

SAT supplies a pair of clampable counterweights of brass with soft alloy





inlay—which you use will depend on the mass of your cartridge. To set the vertical tracking force (VTF), slide the counterweight along the arm's rear stub until you're close to the desired force, then lock it down with an Allen key. A lockable, weighted screw that protrudes from the end of the stub permits easy, precise fine-tuning of VTF.

#### Setup

The SAT tonearm comes in a Pelican case, each of its components nestled in a cutout of high-density foam. Also supplied are Allen keys, a tool for adjusting the bearing pre-load, and other assorted hardware—including, etched in aluminum, a Löfgren-alignment cartridge-overhang gauge inscribed with the stylus arc and grids at the two null points. Three machined spindle inserts of differing interior diameters ensure minimal slop of the gauge when placed on the turntable's platter.

The arm's specified pivot-to-spindle distance is 212.2mm, its overhang 22.8mm, for a total effective length of 235mm—the same as that of the Graham Engineering's standard Phantom, and 4mm shorter than those of the Continuum Cobra, the Rega Research, and other arms. The offset angle is specified as 26.1°. Marc Gomez has chosen null points of 80 and 126mm instead of the more commonly used 66 and 121mm. Thus, as I found out, you can use only his gauge to set cartridge overhang. From SAT's website: "Custom alignment templates to match your specific preferences, available upon request."

Gomez was kind enough to produce a review sample with an arm pillar of diameter small enough that it could be dropped into the Kuzma 4Point base installed on my Continuum Caliburn turntable's secondary arm mount. The SAT's narrow cartridge-mounting slots and thick headshell required the use of SAT's supplied bolts.

In short order, I installed and aligned a Lyra Atlas cartridge in the SAT's headshell. Unfortunately, even with the arm pillar lowered almost fully into the base, the Lyra's SRA was higher than was optimal—but this is a problem peculiar to my setup. It was time to play some tunes.

#### I'm So Glad ...

... I don't regularly foam at the mouth about every good product that comes my way for review, or declare every new one "the best" until the next



comes along. Even when I *think* that, I tend to hold back. In fact, one reader read my very positive review (in the January 2006 issue) of the Continuum Caliburn, bought one, and thought I'd been holding back. He admonished me: "It's much better than you wrote."

This time I won't hold back. With the very first record I played on the Swedish Analog Technologies tonearm, it was *immediately* obvious to me that the SAT was easily, and by a wide margin, the finest, non-sounding tonearm I have ever not heard. The SAT's sound quality so far exceeded, in every parameter, that of any other arm I've heard—including the Continuum Cobra and VPI's JMW Memorial arm.

I had never heard the Lyra Atlas sound as it did when mounted in the SAT—nor had I ever heard Ortofon's Anna cartridge sound as it did when I heard it in Sweden in February, in the SAT arm on Rui Borges's RB turntable. In fact, the SAT fundamentally and dramatically changed and improved the sound of my system in ways I had not imagined a tonearm could, because no other tonearm has. No other *cartridge* has produced this level of improvement.

I'd thought my days of "I'm hearing things I've never heard before" were way behind me. Wrong. The first week the SAT was installed, I was up late every night, playing very familiar records, laughing out loud in delight at what I heard. I'd thought that, at best, today's best audio gear could produce only incremental improvements in sound quality, subtle shifts one way or another—never did I expect to hear the sonic seismic shift produced by this arm.

Even with the best gear, there are usually trade-offs—as with Boulder Amplifiers' 2008 phono preamplifier, which produced dynamics and detail I'd never before heard from familiar

For those who prefer absolute rigidity, Gomez offers the option of a fixed headshell.

records, but at the cost of a dry, analytical quality that some didn't like, or that required reining in with a slightly soft-sounding

cartridge. Ditto the Rockport Technologies tonearm, which also sounded on the dry, analytical side of neutral.

With the SAT, there were no tradeoffs. It suppressed both impulse (pops, clicks) and steady-state (surface) noise better than any tonearm I've heardbut that was minor compared to its other strengths. From top to bottom, the SAT was the fastest, most frequency-extended arm I've ever heard-yet it managed that without sounding at all analytical. We usually think of "slow" bass as having greater texture, but at the expense of detail; and "fast" bass as having greater transient detail, but at the expense of warmth and texture. But bass passed along by (rather than produced by) the SAT was, by a wide margin, the fastest, most extended, most precise, most nimble-and, especially, well -textured-I've ever heard, here or anywhere. It was as if the bottom-end response of my Wilson Audio Alexandria XLF speakers had been retuned—and their bass was very good to begin with. The "starting and stopping" of musical notes, along with retention of textures, were so improved that I found something new and worth appreciating at the bottom end of every familiar record—improvements that ranged from the smallest microdynamic gestures to the largest bass explosions.

Image three-dimensionality, front-to-back layering of those images, soundstage and image focus, overall transparency—all reached previously unimaginable levels of resolution. So did microdynamic scaling—the ability to resolve small-scale shifts in volume. All in the context of fundamentally correct and coherent attack, sustain, and decay.

The SAT arm gave me a new definition for the phrase *transient attack*. I used to evaluate transient attacks using scales of from soft to hard and from

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The SAT arm gave me a new definition for the phrase transient attack.

Lab's recent 180gm edition. The MoFi is the best, the American Columbia sounds as if the great analog master was transferred to PCM with a Sony 1630 before cutting, the

F-Beat sounds analog, the Demon just sounds blah.

Jerry Scheff's double bass in "Brilliant Mistake" seems overpowering even on the best rigs. The SAT/ Continuum/Lyra put it and the entire ensemble in focus and in space as I'd never heard it. Scheff's electric bass in "Lovable" had never sounded this wonderfully gnarly and wiry and three-dimensional. I almost jumped out of my seat. I could hear these differences from all of these pressings, but they "popped" completely with the MoFi. With the F-Beat and MoFi: the rapid-fire kick drum and sticks at the end of "Glitter Gulch"? Never heard it like that. The marimba in "Don't Let Me Be Misunderstood"? Never heard it like that. The acoustic guitars throughout the album? Never heard them like that. And so on.

I'd never heard *most* of what I've played in the last few weeks "like that"—which was why, at the end of each of those late-night listening sessions, I laughed in delight.

I like saying to people, "The folks who invented this playback system had no idea how good it could be. Now, at last, we know."

Evidently, we *still* don't know—but thanks to Swedish Analog Technologies, I now know a great deal more than I did before.

Unfortunately, the SAT arm costs \$28,000. ■

Michael Fremer (fremer@analogplanet. com) is the editor of AnalogPlanet.com, a website devoted to all things analogical.

fast to slow. The SAT rendered those scales meaningless. It passed along transients cleanly and precisely, more like tape than a stylus in a groove, these transients sounding neither etched nor softened, but with their edges convincingly defined. The SAT didn't sound as if it were selectively suppressing or accentuating anything in the realms of time or amplitude. Such harmonic wholeness presented me with reproductions of the sounds of pianos, brass, strings, percussion, and voices that held together with a singularly full, dense richness.

How many times have I heard "Gimme Shelter," from the Rolling Stones' Let It Bleed? Mick Jagger and Merry Clayton (the latter recorded separately in L.A., after the original sessions) were now layered from front to back, each in a specific, definable space that I'd never heard before. There was Jimmy Miller's familiar, always-audible guiro, but now I could "see" and hear its hollowness, and the precision of the stick as it strikes each serration in the gourd was considerably improved while still sounding entirely woody. Later, when the maracas enter, I could hear the beans shaking around inside those gourds with unprecedented texture and weight. Multiply such examples by every one of the dozens of LPs I listened to through the SAT, and the total improvement it wrought in the quality of my listening was overwhelming-day after day, and late into every evening.

After all these years, and considering the precision of playback my system had already attained, I hadn't thought there was any room left for further astonishment. Wrong again. Last night I compared versions of Elvis Costello's *King of America*: the original Columbia, cut at Precision, S.F.; the F-Beat and Demon UK pressings; the Japanese pressing; and Mobile Fidelity Sound

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### LISTENING BY ART DUDLEY

THIS ISSUE: An update on the classic EMT 997 tonearm, plus thoughts on audio show etiquette and Internet trolls.

#### Don't make me hate your product

efore hitting the Refresh key on last month's column, which was dedicated to the challenges one encounters when evaluating audio cables and other accessories, I'd like to share with you a true story: a cautionary tale, as it were, about the hazards of writing reviews for a living.

Seven or eight years ago, just as spring was returning to upstate New York, I made my annual trek to Montreal for Salon Son et Image: one of my favorite audio shows for a number of reasons, not the least being the fact that I can travel there by train.

My time at SSI went well, until the morning I visited a room sponsored by a new company that specialized in cables and accessories. The principals of the company were intelligent, friendly people with good taste in music, interesting if fanciful ideas about playback technology, and boundless enthusiasm for domestic audio. We got along well, I thought the sound in their room was okay, and I expressed interest in reviewing one of their products. But when the time came for me to leave, these two men—I'll call them Mr. X and Mr. Y—were crestfallen. They all but begged me to return to their demonstration before the end of the show, so I could listen some more: an invitation I shrugged off with a vague "I'll try, but . . ."

I pause to explain the algebra of show coverage. There are three unignorable variables: the number of writers covering the show for a given media outlet; the number of exhibits/demonstration rooms at the show; and the number of minutes during which the show is open. To determine the amount of time a reporter can afford to spend with a single exhibitor, one need only divide the total number of show minutes by the number of exhibits for which each reporter is responsible, itself a quotient arrived at by dividing the number of exhibits by the number of reporters. Nothing could be simpler.

Let's say a show is open for three days—a total of 24 hours, or 1440 minutes—and that it comprises 120 individual exhibits. And let's say you're one of two people being paid to cover the show. Thus, you can spend a maximum of 24 minutes at each exhibit—although, in fact, the most time you can afford to spend at each stop is considerably less, given travel time between rooms, bathroom stops, and the like; the real answer is probably 20 minutes, max. Bear in mind, too, that most audio-show demonstration systems comprise products from more than one manufacturer, each of whom contributed to paying for their exhibit space, and all of whom desire publicity.

My visit to the room of Mr. X and Mr. Y lasted about a half hour, during which time no other visitors dropped in—although I believe their door remained open while I was there. (While it's not uncommon for exhibitors to keep their doors closed during show hours, it's also not unheard-of for exhibitors to respond to the arrival of The Press by

locking said door—to prevent the hoi-polloi from diluting the intensity of their presentation, I suppose. That sort of behavior makes my flesh crawl, especially since it also serves to impede my exit.) After I left the room, I made my way down the hotel corridor, intent on visiting the scores of other rooms I was obliged to cover that day.

I was three or four stops down the line when I exited a closed-door demonstration, only to find Mr. X waiting for me outside the door. He accosted me at once, beginning with, "There's something I forgot to tell you," and ending with, "I hope you'll make it back soon." The stuff in the middle could have been a description of an audio cable, an invitation to join the Church of Scientology, or a recipe for Spanish rice; it didn't matter, because I was seriously creeped out and, as a consequence, just as seriously determined *not* to revisit his room in this lifetime. I extricated myself as politely as possible and moved on.

Most audio-show demonstration systems comprise products from more than one manufacturer, each of whom contributed to paying for their exhibit space, and all of whom desire publicity.

About an hour later, I exited another demonstration, only to find Mr. X and Mr. Y waiting for me outside the door. One of them—I forget which—smiled nervously, and made a remark to the effect of, "You probably think we're stalking you." I agreed, with no sign of good cheer, that he had summed up my thoughts with rare accuracy. I stated, flatly, that I had no time to speak with them, and turned and walked away, to the sounds of their protests. Skipping the next few exhibit rooms, I picked up my pace and melted into the crowd of attendees in the corridor, intending to arrive at the show's farthest reaches and then work my way backward.

At least twice more that day, I saw Mr. X hovering within a few yards of whatever room I was entering or exiting; on one of those occasions he noticed me noticing him and gave a blank, wan, unsmiling wave—strange behavior for someone who, I presumed, had paid good money for an exhibition room of his own, and who should have stayed the hell in it. Then I remembered something Mr. X and Mr. Y had said to me when I visited their room: While making small talk just prior to leaving their room, I asked if the show was proving successful for them and their business; they replied, enthusiastically and in perfect accord with one another, that they now felt as though they could pack up and go home early: that they'd been visited by a *Stereophile* writer, it was *mission accomplished* for Mr. X and Mr. Y.

I left the show venue on Sunday, the last day of Salon Son

et Image, and traveled through the Underground City on my way from Place Bonaventure to Montreal's Central Station. Although I arrived well ahead of time, I nevertheless got right in line at the appointed Amtrak departure gate, in the hope of getting a good seat. And here's the *really* unsettling part of the story.

When I got in line for my train, I stooped to tie my shoelaces-and looked up just in time to see Mr. X, without luggage or even a coat, briskly striding through the station's main concourse, craning his head this way and that. I quietly prayed to God, the

Mother of God, and all the saints on the calendar that I might avoid detection. My prayers were answered.

Veteran employees of UPS have a saying: Don't make me hate your parcel. By this they mean: Don't tie string around it, don't cover it with wrapping paper, don't plaster it with Hello Kitty or Jesus stickers, don't draw stick-figures of your family on it, don't write the address using the Cyrillic alphabet. That sort of thing. Although I always have and always will make every effort to approach each review sample in a neutral and open-minded way, my own silent mantra has now become:

Don't make me hate your product.

Mr. X and Mr. Y's product arrived at my home later that year. It acquitted itself nicely but not exceptionally well. I expressed those conclusions in as few words as possible, and the company ultimately complained that they received far fewer column inches than they had expected-an observation I went out of my way to ignore. The experience didn't leave me angry or even regretful; just a little bit wiser with regard to the value of time, and how not to waste it.

And that is why I'm wary of being hounded for reviews by desperate, hungry cable startups.

#### **EMT 997 TONEARM: UPDATING AN UPDATE**

Remarkably, it has been 10 years since the German manufacturer EMT reissued their classic 997 "banana" tonearm of the 1970s. And now, in the same manner that Darryl Jones has been the Rolling Stones' bassist for almost as long as Bill Wyman held the job—a mind-blowing fact if ever there was one—the day draws near when the EMT 997 reissue will have been on the market longer than the original

was. Where has the time gone?

The 997 tonearm was introduced in 1974 as a companion for the thenwell-established EMT 927 broadcast turntable, whose bigger-than-average (17") platter requires the use of a longer-than-average tonearm. Until that time, most 927s were bundled with Ortofon's RF-297 arm, which has a spindle-to-pivot distance of 297mm; the new EMT 997 was of similar length but slightly different geometry-a key to which is the

armtube's position alongside, rather than coincident with, the pivot center-and it offered a spring-actuated dynamic tracking-force mechanism that was reliably well calibrated. EMT, of course, might add that the 997 was a better-made product, with better wiring, higher-quality bearings, and slightly lower effective mass than earlier transcription-length arms—qualities that, in years to come, would endear the 997 to domestic-audio enthusiasts with a taste for vintage gear.





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Early in this century, Keith Aschenbrenner, of the design and distribution firm Auditorium 23, began to gather support for returning the 997 tonearm to production. He won approval from the newly streamlined EMT corporation-now situated in Mahlberg, Germany—and coordinated the efforts to locate the original production tools and dies, and to coax from retirement EMT's Rudi Glaser, whose help was needed in training new tonearm

builders. The goal was to make the current-generation EMT 997 exactly like the original in every way, and Aschenbrenner and EMT succeeded to an extent that eludes most people who are called to the profession of reissuing vintage gear; the only thing different about the new EMT 997 tonearm (\$5250) is its availability with the nearly universal SME (or international) configuration of headshell contact pins, alongside the version that's configured

On currentproduction EMT arms, the stamped-allov housing is replaced by one **CNC-machined** from brass.

for use only with vintage EMT pickups.

For a \$5000-plus tonearm whose appeal is limited mostly to vintage-audio enthusiasts, the new 997 ap-

pears to have sold well (I bought mine in 2008). But in time, the people who revived the EMT began to consider improving it—a scary word to anyone, myself included, who cringes to see the best of the old painted over with the most banal of the new. In domestic audio, that usually means designer capacitors, designer resistors, MDF instead of plywood, silver-plated wire, enormous, jewelry-like connectors, and lots and lots of silicon.





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- What Hi-Fi, October 2013

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- HiFi+, December 2014

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- Hi-Fi Choice, Issue 370, 2013





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I needn't have worried. According to Jonathan Halpern of Tone Imports, which distributes EMT products in the US and Canada, current production of the 997 reflects two major improvements, one cosmetic, the other structural.¹ With regard to the former, it turns out that, on the armtubes of early reissue samples, the paint was visibly stressed at the points where the tube had been bent into shape. Current samples are said to be formed and finished more carefully. The second, structural refinement pertains to the straight-sided, bell-shaped housing that covers and supports the arm's downforce mechanism and vertical bearings. In original EMT 997s and early reissue samples, that part was stamped out of aluminum alloy. But because the vertical bearings are tensioned against this part—which also holds in place one end of the downforce spring—the benefits of a stronger material and a more precise fit are apparent. Thus, on current-production arms, the stampedalloy housing is replaced by one CNCmachined from brass.

Last year, I received from Tone Imports a new sample of the EMT 997 that incorporated both refinements. My 2008 sample must have been free from the bending and finishing flaws described by Halpern-it and the new one looked equally fine to me. (Not that I'm a terribly good judge. Some people have tin ears; I have a tin eye.) As for the change from stamped alloy to machined brass for the bearing housing-which was visibly apparent only after it had been pointed out to me-there was no doubt that the bearings on the new sample were even better adjusted than those on the one I'd bought: The vertical bearings on the newest 997 had less play—in fact, none that I could detect—with no signs of added friction. If anything, the newest arm, when set for zero downforce and perfect balance, was even quicker in returning to its resting position after deflection. And after several months of harder-than-average use—as a reviewer, I change pickup heads and counterweights far more often than would the average 997 owner-the bearings remain in perfect condition.

The sonic consequences appeared to be a surprising if subtle increase in musical drive—surprising because the 997 reissue was already so good in that respect. Yet when I used the newest sample of the EMT arm to play some of my favorite records by



The goal was to make the current-generation EMT 997 exactly like the original in every way.

**Left:** the CNC-machined bearing housing of the lastest EMT 997. **Below:** a graphical explanation of the 997's geometry.

Dexter Gordon, David Grisman, and Bill Monroe—or some beloved 78s by Louis Armstrong, Django Reinhardt, and Red Allen<sup>2</sup>—it was easier than ever to interpret what I was hearing not as mere sound but as music, being made on the spot by people who leaned in to every note. It also seemed that the improvement in the 997's bearing housing resulted in a slight increase in the sense of scale; listening to the 1962 recording by Hans Knappertsbusch and the Bayreuth Festival Orchestra and Chorus of Wagner's Parsifal (Philips PHS 5-950),3 the space in which the Prelude to Act I unfolded seemed more expansive, adding to the feelings of serenity and consecration that attend that music under the best of condi-

Note that those observations are based on a sample of the EMT that has been painstakingly set up and adjusted. In a nutshell, and setting aside such considerations as sensible design and high-quality construction, there are two primary reasons for having a transcription-length tonearm such as the 997: Its higher-than-usual mass is more attuned to the low-compliance pickups favored by some hobbyists, myself included, and its greater-thanaverage length serves to minimize the effect on lateral tracking performance of the curve of the arc through which any pivoted arm must pass. But the latter comes with a caveat: Because a longer arm creates a straighter arc, it requires considerably smaller amounts of overhang and offset angle-the two

elements introduced to the geometry of pickup arms in order to make their behavior more ideal. Yet as overhang and offset are reduced, errors made in achieving them become far more critical-and so, in a real sense, while the extra-long arm has the potential for less lateral-tracking-error distortion, it also carries the potential for greater distortion if not installed and adjusted correctly. (There are parallels in other areas of phonography, not least being the design and manufacture of turntable bearings: The larger the bearing, the easier it is to keep runout error to a minimum, relative to the bearing's diameter. Those who are impressed with claims that bigger is better may benefit from an added measure of cynicism.)

Now as always, tonearm shoppers are encouraged to read and commit to memory "Arc Angles," Keith Howard's landmark article on tonearm geomtry.<sup>4</sup> My own EMT 997 installation is based on Howard's observations, and I'll add to the online version of this column the precise spindle-to-pivot distance and other parameters I've arrived at and put into use.

<sup>1</sup> To the mainstream-media technology writers who address the domestic-audio market only annually, I imagine the only way to improve a vintage tonearm would be to conceal within it a miniature analog-to-digital converter—whose 44.1kHz performance would, I'm sure, be indistinguishable from the 44.1kHz performance of anything else.

<sup>2</sup> The jazz Red Allen, not the bluegrass Red Allen (whom I also like).

<sup>3</sup> Recently made available as a Speakers Corner reissue that I have yet to hear.

<sup>4</sup> See www.stereophile.com/reference/arc\_angles\_optimizing\_tonearm\_geometry/index.html.

In the months after I received my first EMT 997 reissue, its superiority to every other tonearm I'd used became obvious. That impression hasn't lost a bit of its strength—even in the face of a growing number of new and often excellent-quality transcription-length arms—and the arrival of an even better-sounding 997 leaves me no choice but to reconsider its listing among Stereophile's "Recommended Components," and to suggest the seldom-used Class A+: The EMT remains the bestsounding tonearm I have used on my vintage Garrard 301 and Thorens TD 124 turntables, and the best-built arm I have owned.

#### **DUNNING-KRUGER MODEL ONE**

It happened again: I got myself into another dustup on the Internet—not an audio website or a news website or a political-commentary website, but a place dedicated to discussing music, which is generally regarded as a commodity that makes people happy.

The scene of this epic beating was an area dedicated to a single band, although the conversation therein often extends its hand of friendship to the music of similar artists. Like Dr. Ruth Westheimer, this band's following is small and elderly; at 60, I seem to be slightly on the young side of its members' median age. I think it's also safe to say that this band's following is generally well educated, at least as compared with something like the followings of Mötley Crüe or Ted Nugent, though perhaps not so well educated as the audiences that flock to hear Meredith Monk or Robert Wyatt. (I love Robert Wyatt.)

It wasn't an audio website, but it was an audio discussion: The topic of Neil Young's PonoPlayer had just been trotted out, just as it was surely trotted out on music websites devoted to everyone from the Beatles to Tonto's Exploding Headband. And two of the most frequent contributors to the ongoing discussion-at least one of whom has, on previous occasions, distinguished himself with his considerable expertise on matters of music-endorsed the prevailing blogosphere opinion, enunciated by former New York Times contributor Dave Pogue, that the PonoPlayer in particular, high-resolution digital in general, and perfectionist audio in an even more general sense, are all nothing more than snake oil, suitable for consumption only by delusional dumbasses. Which would

I was made to understand that it is simply unacceptable for me to decide what does and does not work for me.

be you and me.

I did not consult my wife prior to posting my own opinion on the matter. Had I done so, she would have reminded me that I generally do no better tilting at windbags than I did in the schoolyard fights of my childhood—and I should just keep my unsolicited, unremunerated opinions to myself. Fat chance of that happening—but I was respectful, polite, and economical:

[Dave Pogue's] anti-audiophile bias was apparent from the first line. The only way to judge Pono or any other audio product is to listen to it the way you normally enjoy music: at leisure, in comfort, and with abundant time to come to an informed decision. A/B testing is anathema to the enjoyment of music, and will tell you nothing. If you try Pono and you don't hear a difference, or if you hear a difference that you consider of little or no significance, then, by all means, keep your money tight in your hand.

Within minutes, I felt as though I'd loosed a snake into the garden: Anger of a sort I'd never before seen on the site was heaped on my head, the first example being:

If your idea is that tests are irrelevant and that [high-resolution audio] just IS superior, no matter you have no way to prove it (and many ways to disprove it), doesn't that sound like "there is only one God and it's the one I worship"?

Holy shit, where did *that* come from? I offered the only sensible reply:

What I'm saying is: If I hear a difference, and if I can afford the product that I prefer, I will buy it because it's right for me. Anyone else is free to buy or decline to buy whatever they wish. Your "one true God" example would only apply if I stated that I'm correct and anyone who disagrees is deaf; I neither said, nor do I believe, any such thing.

I admit that I was not prepared for the pitchfork-and-torch soirée I was about to encounter: Have you done a blind test when you could actually prove you hear the difference? Or you just think you will? And calling Pogue biased . . . well, he's one of the most illustrious tech journalists out there!

I replied:

With respect, the quality of "illustriousness" does not confer immunity from criticism. If blind testing suits you, then I think that's fine—no condescension intended. It works for you. It does not work for me.

But then I was made to understand that it is simply unacceptable for me to decide what does and does not work for me:

You seem to be saying the only test for you is leisurely listening and deciding which is better. . . . [OK], but if that's a valid "test" then its results should be repeatable, at a minimum for a single listener. You ought to be able to identify the better source at a better than random guess rate. If not, then I think the subject is gleefully engaged in self-deception.

Again, I expressed the only reasonable rejoinder:

You are free to consider my approach to be self-deception, although I respectfully suggest that it is not. If someone requires repeatable or, shall we say, mathematically demonstrable proof, I do not condescend to that point of view: It's fine for them. But I am satisfied with the "evidence" of cumulative experience, or cumulative empiricism.

What followed was a loop. And although my honorable opponents in this debate would no doubt shudder at the simile, it was like being stuck in a modulated-and-locked runout groove, à la *Sgt. Pepper's*, where the only things one could hear were a constant repetition of me saying "I don't require A/B testing to know what I like" and my opponents saying "That's not acceptable!" Shouting it, actually.

In his excellent "As We See It" in Stereophile's May 2015 issue,<sup>5</sup> John Atkinson expressed a number of possible reasons why mainstream-media reviews of the PonoPlayer have been negative, and why the same outlets, which are almost uniformly hostile to

<sup>5</sup> See www.stereophile.com/content/access-journal-ism-vs-accountability-journalism.

audiophilia, don't even blink at hyperexpensive wristwatches, automobiles, homes, and the like. JA's observations are, to a one, convincing—but what can explain the anger? What can explain the outrage of those who condemn the ways in which others enjoy themselves, and who feel compelled to wrap their

### "If you're very, very stupid, how can you possibly realize that you're very, very stupid?"—JOHN CLEESE

disapproval in the flag of science? Is it misplaced puritanism? Tribalism? The not-invented-here syndrome? Jealousy that a major artist with social-issue cred has aligned himself with audiophiles instead of with skeptics? My guesses are: "a little," "a lot," "almost certainly," and "feck, yeah."

At the end of his editorial, John Atkinson singled out "writers who just don't know enough to know how little they know about audio." Among psychologists, this is known as the Dunning-Kruger effect (first described at Cornell University, a mere two hours from my doorstep), which is best summed up by the inimitable John Cleese: "If you are absolutely no good at something at all, then you lack exactly the skills you require to know that you are absolutely no good at it." Cleese breaks it down into even simpler terms: "You see, if you're very, very stupid, how can you possibly realize that you're very, very stupid?"

I think we've found the problem. 
Art Dudley (art.dudley@sorc.com) posts on elder-rock sites from his home in muddy Cherry Valley, New York.

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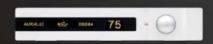
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# MUSIC IN BY KALMAN RUBINSON //THE ROUND

THIS ISSUE: KR tests Emotiva's XMC-17.2-channel preamplifier-processor with Dirac Live.

### **Emotiva & Dirac**

ost new preamplifierprocessors now fall into one of two categories. First are the fully featured models, with ever-growing numbers of channels to support such immersive surround-sound formats as Dolby Atmos, Aureo3D, and DTS-X. An example is Marantz's 13.2-channel AV-8802, which replaces the 11.2-channel AV-8801—a sample of which I've owned for barely a year and use only in 5.2! The second category is that of such high-end models as Classé's Sigma and NAD's M17, which offer only 7.1 or 7.2 channels, and from which nonessential features have been trimmed in favor of audiophile-grade circuit components and construction. But if money is no object, there is a third class of pre-pro, exemplified by Trinnov's Altitude<sup>32</sup> and Datasat's RS20i, in which no compromise is made in any of these parameters.

Then there's the Emotiva XMC-1, a 7.2-channel, US-made pre-pro that, to appeal to a wide range of music listeners, offers all bells and whistles—

and, at the time of writing, costs only \$1999. Unfortunately, by the time you read this, the price will have risen to \$2499—but considering what the XMC-1 offers, that's still pretty good. Many readers may recall the release of Emotiva's first pre-pro, the UMC-1, which was fraught with bugs and quirks, although current users seem to be okay with it. Worried that the launch of the XMC-1 may have been similarly premature, I waited until there were many units in the field, and Emotiva's promise of inclusion of Dirac Live room acoustics correction had been fulfilled, before requesting a review sample. Now, all that can be put aside: Early adopters of the XMC-1 have been picky but pleased, and my sample has proved devoid of significant problems.

When I unpacked the XMC-1, its general construction reminded me of Emotiva's XPA-5 multichannel power amp,¹ in more mature and formal guise. At 21 lbs and 17" wide by 5.75" high by 15.5" deep, the XMC-1 is substantial, if not as trim as the NAD M-17 or the Classé Sigma, or as imposing a presence in the rack as the Marantz AV-8801. The front panel is dominated by a large (5.5"), clear, detailed digital display, flanked left and right by groups of controls, with more controls below—again, more buttons than the NAD or Classé, but many fewer than the Marantz. Goldilocks would judge the Emotiva to be "just right," but I'm not sure how she'd respond to the intense glow of the XMC-1 when powered up. *All* of its controls shine a bright blue—ul-



I can't recall having seen a more comprehensive or useful front-panel display.

tramarine, my wife says—though the display itself is somewhat less bright: a shade of turquoise, I'm told. Even I see the mismatch, which is not resolved by any of the XMC-1's range of brightness settings.

The 256x64 OLED screen itself is exemplary. It displays three lines of information, each readable from a reasonable distance, depending on the brightness setting and the ambient light. The top line shows the name of the source and sound mode selected, and the volume level. The middle line, prefixed with A (for Audio) shows the audio connector, the audio format of the input, and its sampling

frequency and bit depth. The bottom line, prefixed with a V (for Video), shows the video connector, resolution, frame rate, video format, and bit depth. I can't recall having seen a more comprehensive or useful front-panel display.

To the right of the display is a large volume knob; to the left, a five-button navigation array. Below the display are nine input-selector buttons; below these is a large, central On/Standby button flanked by pairs of more buttons: on the left, Menu (opens main menu for navigation by the five-button array) and Dim (controls front-panel brightness); on the right, Audio (selects available audio modes) and Info (sends information displayed on the screen to the OSD). Tucked into the lower left corner of the faceplate are a ½" headphone jack, a USB Type A port, and a ½" jack for audio input from a portable device.

All of these functions and more can be controlled through the remote handset, which grants direct access to features that otherwise demand multiple navigation steps. Most notable of these are the remote buttons that let you: trim levels for all channels except the front L/R; change speaker presets (Dirac Live, Config 1 or Config 2); manage power, level, and input for Zone 2; and control the AM/FM tuner.

 $1\ See$  this column in the November 2011 issue, www.stereophile.com/content/music-round-51.

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The last function is useful, but hardly as crucial as in the past, and its placement at the bottom of the remote is a reasonable convenience that contrasts with Emotiva's unfortunate choice to devote to this option the first input button on the remote and on the front panel, and to actually print its name under both-every input other than Tuner is assignable and nameable. The result is that whatever source is assigned to input 1 (in my case, cable TV) is linked to the second button, and all subsequent assignments are offset to the right by the tuner place-holder. In this day and age, the tuner selector button should be assignable like the others-or, if Emotiva has a good reason to make it a fixed assignment, it should be the last.

Finally, the remote's clear layout and comprehensive range of controls is compromised by its heaviness and complete lack of illumination. But all in all, the range of control afforded by the XMC-1's front panel and remote control is outstanding.

On the nicely arranged rear panel, Emotiva has eliminated all legacy video connections by including only HDMI inputs and outputs. On the other hand,

the XMC-1 has been made friendly to audiophiles with the retention of a reasonable selection of analog and digital inputs. The topmost of the three tiers of connectors includes, from left to right when viewed from the rear: AM/FM antenna inputs (first again), eight HDMI inputs, and two HDMI outputs. The middle tier begins at the left with a row of 7.1-channel analog inputs, pairs of jacks for analog stereo Inputs 2 and 3, stereo Record ins/outs, and stereo outputs for Zones 1 and 2—all on RCA jacks. Then come three TosLink inputs, one TosLink output, and an AES/EBU (XLR) input. The right portion of the middle tier comprises a USB Type B input for streaming audio (a WASAPI driver can be downloaded), an Ethernet jack, a USB Type A input for firmware updates via a thumb drive, an IR in/out pair, and four trigger outputs.

Finally, the bottom tier has pairs of single-ended (RCA) and balanced (XLR) jacks for analog stereo Input 1, two sets of 7.2-channel analog jacks (RCA and XLR), and, finally, an IEC power-cord inlet and main Power switch. All analog inputs other than the 7.1 set can be passed through the

XMC-1 without being digitized, or digitized and processed to be output by the XMC-1's TI/Burr-Brown DSD-1796 DAC chips. The 7.1 inputs are always directly output as analog.

I connected the XMC-1 to my cable box (HDMI 1), Oppo BDP-103 universal Blu-ray player (HDMI 2 and 7.1 analog input), Mac mini (Windows 7) server (HDMI 3 and USB), and a Korg DS-DAC-100m mobile D/A processor. Power amps were a Classé Amp5 (via RCA) or a Bryston 9BST (XLR), connected to my Paradigm Studio60 v3 and Studio20 v2 speakers. The XMC-1 took nearly a minute to fully power up from turn-on-in this it was more like a PC than an A/V component—but that process can be significantly accelerated by leaving the HDMI ins/outs active while in standby. I inserted the nominal settings for speaker setup and set to work.

### **Straight-through sonics**

The straight-through sound of the XMC-1, from both analog and digital sources, was clean and open—not bright, accented, or distorted in any way, and with no added warmth.

Overall, it was more neutral than



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friendly, which I count as a plus. With all its options for tweaking the sound—including tone controls, parametric EQ, and Dirac Live—it was reassuring that the XMC-1 *begins* with a clean palette. I played a wide array of sources through many inputs, and the XMC-1 handled everything with aplomb, including PCM up to 24-bit/192kHz and DSD.

#### **Dirac Live**

It was then time to look at what most makes the XMC-1 special: It's the first affordable pre-pro to include Dirac Live room correction. As standard kit, the XMC-1 includes Dirac Live LE (for Limited Edition?) and the necessary calibrated USB microphone. About two weeks before I sent this copy to Ye Editor, Emotiva finally

released what the call the Dirac Live option (\$99), and I was able to compare them. On paper, the differences are simple: 1) Dirac Live LE has only the default target equalization curve, while full DL permits the use of custom target curves. 2) LE has a default frequency range for application of EQ to each speaker, while full DL allows the creating, editing, and storing of the range as part of the target. 3) LE supports only the supplied microphone; full DL also supports third-party calibrated mikes. 4) Full DL includes individual channel-level controls for the test signals, to help when gain and sensitivity vary greatly between channels; LE does not.

With either version, the user first needs to set up the Dirac configuration preset, including the sizes and The XMC-1 has been made friendly to audiophiles with the retention of a reasonable selection of analog and digital inputs.

crossover settings for the speakers—but with all levels set at 0dB. Note that there is no option or display of speaker distance and channel delay—both will be set by Dirac Live's calibration, but those results will not be reported to the user. Also, with the distinctions noted above, the actual procedure, on your personal PC/laptop is identical with my laptop readily connecting with the



XMC-1 over the network and with the USB mike.<sup>2</sup>

My run of Dirac Live LE was not a great success: It sharply reduced the subwoofers' outputs (fig.1), and produced little change in sound for the other speakers-all of which I confirmed by measuring using XTZ Room Analyzer II Pro. Clearly, along with the reduced subwoofer contribution, there was a correction of room modes; as a result, I didn't have a preference between my system's sounds before and after Dirac Live LE: Both were okay, and each had some advantages over the other. I didn't repeat Dirac Live LE, but did gain insight into it when I tried the full version of Dirac Live. I recommend that users not pressed to meet a publication deadline work seriously with LE before forking over \$99 for the full Dirac Live.

Installation of the full version of Dirac Live (and XMC-1 Firmware Update v3.0) was trivially easy, and will be familiar to those experienced with the original Dirac Live running on a Windows or Mac computer. To run full Dirac Live, I made these changes: 1) The front two speakers were now Bowers & Wilkins 683 v2s, in for review. 2) I replaced the Emotiva mike with a UMIK-1 and used its 90° orientation calibration file, as specified by Dirac. Presumably, the calibration file for the Emotiva mike is suitable for the 90° orientation (labeled "off-axis"), but it runs from 29Hz to 20kHz with 200 data points,3 while the UMIK-1 file runs from 10Hz to 20.01682kHz with 615 data points. 3) In Dirac Live, I trimmed the levels of the two subwoofer channels to better match them with the B&Ws. 4) I expanded the range of correction for all the main channels to 20kHz, but continued the slow rolloff of Dirac Live's default target curve. The



With the triumphant results from Dirac Live, I found the XMC-1 to be a superb-sounding pre-pro for all media.

rest of the procedure was as identical as I could make it to the first pass, with Dirac Live LE, using the same nine mike positions specified by Dirac.

The audible and measured results (fig.2) were much, much better than with my first run. My wife and I had no trouble distinguishing between the Config 1 preset (normal level and distance settings) and the Dirac Live preset (corrected but unknown level and distance settings). The Dirac preset easily sounded more smoothly balanced, with a deeper, wider soundstage, and bass that was both more powerful and better defined. It also gave voices a greater sense of presence through the slightly reticent B&Ws. Between it and the uncorrected preset there was simply no contest.

The internal construction of the XMC-1 is characterized by modularity and serious shielding.

With the triumphant results from Dirac Live, I found the XMC-1 to be a superb-sounding pre-pro for all media. All of my usual test discs and files, not itemized here but peppered throughout my previous columns, were thrillingly communicated with great tonal beauty and impact.

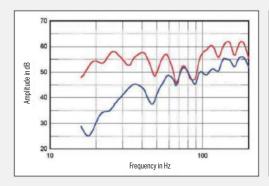
Old friends—eg, the Guarneri Quartet's disc of the Ravel, Debussy, and Fauré string quartets (DVD-A, Surrounded By Entertainment SBE-1004-9<sup>4</sup>)—were richly warm and vibrant. The Ravel was used last December by Meridian principal Bob Stuart to demonstrate that company's MQA encoding in stereo, to great effect.<sup>5</sup> However, I think

2 Both Emotiva options lack some features of the multichannel Dirac Live Room Correction Suite, which runs directly on a Windows or Mac computer (\$686.76, due to the strong US dollar as of April 2015). One is the ability to see and trim levels and delays for all channels. Another is the ability to simultaneously have on tap up to four sets of correction filters, for instantaneous change and comparison. One can download any number of filter sets from one's computer to the XMC-1, but it can hold only one set at a time. Finally, the digital pipeline through Dirac on the XMC-1 is limited to 48kHz; higher bitrates will be downsampled for processing by Dirac Live. The Windows and Mac versions of Dirac Live run up to 192kHz.

3 Users of the Emotiva mike might want to try one of the independent calibrations made by other users and made available via links on Internet forums.

4 Note that this recording comes from the same source as one of my other longtime favorites, Willie Nelson's Night and Day (DVD-A, Surrounded By Entertainment SBE-1001-9). Take this as a strong recommendation to keep an eye out for any of Surrounded By's DVD-A releases, now long out of print.

5 See www.stereophile.com/content/ive-heard-future-streaming-meridians-mqa.



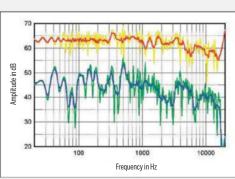


Fig.1 (far left) Measured room response, 10–200Hz, with Dirac Live LE (blue) and without Dirac Live LE (red) (5dB/vertical div.).

Fig.2 (left) Measured room response, 20–20kHz, without Dirac Live (blue, smoothed; green, raw data, both offset by -10dB) and with Dirac Live (red, smoothed; yellow, raw data) (5dB/vertical div.).

that the added reality of ambience conveyed by this recording's 4.0-channel tracks through the XMC-1 gave MQA more than just competition; it elevated the experience. This surround experience easily scaled up to encompass a staggering representation, by Manfred Honeck leading the Pittsburgh Symphony, of Strauss's tone poems *Don* Juan, Death and Transfiguration, and Till Eulenspiegel's Merry Pranks (SACD/CD, Reference Fresh! FR-707SACD), one of my selections for the 2014 edition of "Records to Die For."6

### **Ouibbles**

This returns us to a thread that runs throughout this review: The Emotiva XMC-1 did everything one could ask of a modern pre-pro and did it very well, but with some surprising eccentricities:

1) Some users have posted on Internet forums that their XMC-1s often make an annoying splat of noise between tracks, or at the end of DSD tracks played from a disc spinner. That happened with my review sample, too. Emotiva is aware of the problem, and

6 See www.stereophile.com/content/2014-recordsdie-page-5.

has told me that it has "shortened the muting times in our latest firmware.... We are continuing to refine the way our muting works to reach a solution that is ideal for everyone." Strangely, there was much less "digital garbage noise" when I streamed the same DSD tracks through the XMC-1.

- 2) Although the XMC-1 displays the volume level as "xx.0," the decimal place is never used: the volume is changed only in steps of 1dB.
- 3) The invisibility of settings for speaker distance and channel delay when using either version of Dirac Live makes it impossible for persnickety users to carefully integrate the outputs of multiple subwoofers with those of each other and the main channels. Like many other EQ systems, Dirac Live tests and corrects each speaker channel independently, but never tests their simultaneous acoustic interaction with the room. Particularly in the bass, this interaction can be tweaked with cutand-try adjustments of delay, but this is not possible with the XMC-1.

### In summary

Despite the quibbles I've scattered throughout this column, the Emotiva XMC-1 is a powerful and flexible preamplifier-processor that is beyond any serious criticism, especially in view of its very competitive pricing and lack of bugs. Emotiva has trimmed away legacy video ins and outs, but offers the XMC-1 with a full repertoire of audio options to appeal to the music lover. The XMC-1 exceeded my expectations in every way-most important, in the way it sounded.

### **Coming up next in the Round**

On tap is the Marantz AV-8801 prepro, miniDSP's \$299 multichannel DAC, and some cataclysmic changes in my reference systems.

Kalman Rubinson (STletters@sorc.com) combines a career teaching neurobiology with shuttling between surround-sound-outfitted homes in Manhattan and Connecticut.

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### QBD76

For over twenty years Chord Electronics has been making some of the world's most innovative DACs. Not content with off-the-shelf DAC chips, Chord engineers developed their own proprietary pulse-array FPGA (programmable) DAC, the legendary DAC64, a Stereophile magazine A+ Recommended Component. Chord's second-generation FPGA DAC, the \$8,000 QBD76 HDSD, was able to recreate a delicate signal down to a remarkable -150dB accuracy and redefined DAC performance.

#### QuteHD

In 2012, this same state-of-the-art technology was made available in Chord's \$1,795 QuteHD DAC. The performance of this ground-breaking device astounded the world's press: the QuteHD was favorably compared to the finest DACs in the world including those from dCS, Esoteric and EMM Labs. With Chord's breakthrough proprietary DAC technology, the QuteHD received dozens of accolades, best-in-class awards and tremendous

"Competitive with top flight CD players from Esoteric, dCS, Accuphase and EMM Labs, this DAC goes head to head and matches them on most scores... an absolutely stunning result for the QuteHD. I am wildly enthusiastic about this DAC".

- Phil Gold, enjoythemusic, December 2012

### Hugo

The Hugo, released in early 2014, further extended Chord's ground-breaking DAC technology and has become a revolutionary product that has set the standard by which all DACs are measured. By year's end the Hugo had been recognized with over 40 glowing reviews from just about every audio hardware-reviewing entity in the world

According to Chord founder John Franks, "We were shocked by the off-the-chart Hugo sales. Thousands of people purchased Hugo to use as the main DAC in their home systems – many of which contain price no object components." Why would so many people buy a \$2,500 DAC to use in their world-class

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reference systems? Simple: because after careful evaluation they concluded Hugo delivered the very best sound, and that's all that really matters.

### HugoTT

In January 2015 Chord Electronics introduced the new HugoTT (\$4,795), the most sophisticated DAC they've ever made and one which takes Hugo performance up yet another level and adds functionality and connectivity.

The new Hugo TT offers numerous improvements over Hugo and a substantial improvement in sound quality. Larger batteries and new super capacitors give the Hugo TT more power, galvanic isolation on the USB input completely eliminates jitter, increased Class A bias reduces distortion, plus the Hugo TT is now a balanced design. As a result, the Hugo TT has more power, better dynamics, greater dynamic headroom, a smoother, more natural sound and better soundstage recreation.

Ease of use is improved by a new front-mounted input selector, cross-feed selector, power on/off switch, LED display of selected input, retention of selected input after power down, better accommodation of audio cables, a full function remote control and new single ended and balanced outputs. Apt-X Bluetooth range is increased to 150' and a 750hm coaxial input has been added. Finally, Hugo TT is built to last with a beautifully machined solid aluminum case and a 15 – 20 year battery life.

### 20ute

The 2Qute, introduced March 2015, is a Hugo DAC in a Chordette chassis. For those who want the best-sounding DAC for their home system the new 2Qute (\$1,795) is undeniably the best choice. Enhanced RF filtering plus an extra stage of voltage regulation enable the 2Qute to deliver the same performance levels as the Hugo despite being AC powered.

Is the 2Qute the world's "best" DAC? – we'll leave that for you to decide – but, endowed with all of Chord's trademark FPGA DAC technology, it is irrefutably the world's best buy in state-of-the-art high-performance DACs.



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## BEYOND THE LIGHT

THE EVOLUTION OF CALEXICO CONTINUES BY ROBERT BAIRD

W

hile Beethoven's Symphony 6 may evoke the Vienna Woods, and Art Blakey's *A Night at Birdland* may be an aural snapshot of a loud, smoky night on 52nd Street in 1954, how connected is most music—rock music in particular—to the landscapes in which it was composed? Do the Beatles scream Abbey

Road? While the Standells may have composed "Dirty Water" about Boston Harbor, do garage-rock guitars and lines like "Along with lovers, fuggers, and thieves (aw, but they're cool people) / Well I love that dirty water" really evoke the Charles River, the Rat, and Boston Common when you hear them?

One locale about which that question continually lingers is the striking landscape of Tucson, Arizona. Writers from elsewhere—particularly the Northeast—seem endlessly fascinated with how the Sonoran desert pervades and informs the music made there. Although their names only add to the problem, Giant Sand, the Sidewinders (né Sand Rubies), and Calexico have all had to wrestle with the limits of being "desert rock" bands: disciples of the way rocks and heat and cacti somehow infuse the music with a mysterious allure and power. While singer-guitarist Joey Burns is glad the whole desert-rock thing inspires people to listen to Calexico, the band he and drummer John Convertino formed in the late 1990s, he sighs when I bring it up. For those who've lived in the desert, as Burns and I have, a review of Calexico that includes nonsense like "Calexico has somehow gone deeper, tapping the dry desert earth until it yields new realms of thrilling, unexpectedly potent sound" (NPR, April 5, 2015) seems silly. With the release of Calexico's ninth album, *Edge of the Sun*, in May, it's high time the desert-rock angle was retired.

"You have to be able to see past any connection to landscape," Burns says. "There's an energy there that is not so much about, 'Hey, these guys are from this part of the world.' There's an energy within the band. That's one of the reasons why I wanted to go somewhere else to record our new record, just to kind of get us and get others—whether it's journalists or just people who are listening—thinking outside of the Southwest.

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"I'm finishing writing up a piece for Drowned in Sound right now, and I'm talking about what role does traveling or geography or location have on your music, and I mean, I think it's nice to have a good location—it's not imperative. As a kid, your imagination goes wild, and ours still does. We're able to create really interesting soundscapes or moods and use different instruments. And we have members in the band from Spain, Germany, and the group Takim, from Greece. They're really amazing.

"There are a lot of flavors [in Calexico's music], and there always have been. I try and stress that to journalists. I think on this record, we try and deflate it all, try not to hold back stylistically, and just run with the variety, with the reality of what we do."

That reality has always been among the most intriguing in all indie rock: a mix of guitar pop, Burns's unaffected voice, flashes of the norteño accordion and the mariachi trumpet, Convertino's jazz-inspired drumming, and arrangements that can include a kitchen sink full of instruments, including Theremin, French horn, glockenspiel, and bouzouki. Calexico's constantly evolving sound is wonderfully free of boundaries and fearlessly open-minded. Guest artists from around the world and across the musical spectrum are always a part of the band's concerts and recordings; the more exotic, the better. Part world music, part indie rock, Calexico's musical vision is as big as, ahem!...a desert sky.

To shake or at least temporarily decelerate the desert-rock vibe, recording for Edge of the Sun began a little farther south, in lush Coyoacán, one of the 16 boroughs of the Federal District of Mexico City. "Our keyboardist, Sergio Mendoza, had done some work in Coyoacán, which is just south of Mexico City," Burns says. "Supposedly, it's the neighborhood or borough where Cortés established his residency before launching his warfare against the Aztecs. I read this book by Buddy Levy, it's called Conquistador: Hernán Cortés, King Montezuma, and the Last Stand of the Aztecs. So for me, there was also walking around, seeing this colonial town, and thinking about the history.

"More importantly, going there was giving ourselves not only a chance to get out of our comfort zone, but also a chance to focus, because we are all so busy now with our families and our lives. I have twin daughters who just celebrated their fourth birthdays. And John [Convertino] now lives in El Paso.



He moved from Canton, Ohio, to El Paso. His wife is teaching at the university there. So he's not far, just further along I-10.

"It was really an opportunity to be in the same space and eat, live, sleep in Mexico. Our host had his girlfriend's mom cook for us, which was divine, and we're in this beautiful part of Mexico. We wanted to explore that a little bit. So it was a field trip, but it was also having some time to focus on where are we gonna take this new record, and where are we at. Recording in Mexico also gives us another reason to say, 'Hey, let's go back and perform there."

The demos and rough sketches for Edge of the Sun were recorded in Fresno Estudio, in Coyoacán, which Burns describes as "a nice home studio." "We didn't intend on keeping some of those tracks. We were just going to go back to WaveLab [Recording Studios, in Tucson to re-record everything, which we did, but there were quite a few tracks, like 'Falling from the Sky' and 'When the Angels Play,' which is a co-write with Pieta Brown [daughter of Greg Brown], that were recorded down there. 'Beneath the City of Dreams' was another song that was recorded initially down there, and then we came back to Tucson after two weeks and filled in some of the sketches."

Originally the rhythm section and key members of Howe Gelb's everchanging Giant Sand collective, Burns and Convertino in the late 1990s broke from Giant Sand to became Calexico. For a time, hard feelings lingered on both sides, though those wounds have since healed. The core of Convertino and Burns has expanded to include seven members, including bassist Ryan Alfred, multi-instrumentalist Mendoza, pedal steel player Paul Neihaus, trumpeter Jacob Valenzuela, keyboardist and trumpeter Martin Wenk, and guitarist and bassist Jairo Zavala.

Ever since 1997 and the band's first album, *Spoke*, a big part of the Calexico story has been engineer-producer Craig

Schumacher, who owns and operates WaveLab Recording Studio in Tucson. Asked if the band has a sound that somehow radiates desert mystery, Schumacher gives a sage chuckle. "I would say the answer to that question really lives with John Convertino and the way he drums: his understanding that drums should have a natural sound, and that's what he strives for. We've always had that working relationship where I understand that I about him, and I don't try and alter that. In fact, I work really hard to make him happy. For example, he is just convinced that the Shure 57 [microphone] on a snare drum is the way to go. And so I'm never, like, 'No, we should try something different.' Any time I've done it, he looks at me, like, 'C'mon, dude, you know better than that.' He's such a lyrical drummer that he is easy to capture minimally, so I got really good at capturing this essence of sound with not many microphones. He likes more of the room mike for his drum sound than he does the close mike."

Asked about the evolution of the band's sound over the years he pauses. "Adapting to the Pro Tools world is part of that: the ability for them to do things, like, in Mexico City, and then say these tracks are still worthy enough to continue on them. We don't have to go into a bigger studio to get keeper tracks for records. So that changes the sound.

"I think this record is a little more exciting, drumwise, because it isn't as unified as some of the older records, where we did all the drums in my space. Because the drums on this record were recorded in different locations, I like that it has lots of different tones; some are really rockin', and some are more open. I noticed that mixing it, because no song was like, 'Oh, I can just use the settings from the last song.' Nope. Everything was completely different.

"I think the widescreen sound [on the records] is not lost in the live show, which is an evolution. Back in the Hot Rail era [2000], we used Mariachi Luz de Luna. Bringing out 18 mariachis was fun, but we always talked about that as a danger that could eclipse the band. Now, between Jacob and Martin with the trumpets and Martin being able to pick up a nylon-string or a different instrument—and with Sergio in the band, who can grab a vihuela or an accordion—everything can now be handled [in the studio) by these multitalented musicians. Conversely, though, I also think the songs and songbook [are] strong enough

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now that they could go out like what [Wilco's Jeff] Tweedy just did, almost solo, and get away with it. Joey, in the future, he'll inevitably do a solo tour.

"When you know things, you get in your own way, and on this record I feel like we tried to get out of our way again. It was not pressured. It felt good. Joey and John were always in good spirits, and Sergio really was able to collaborate. It was very open, and everyone was feeling good. That's reflected in the album."

Calexico's last record, Algiers (2012), was recorded in the New Orleans neighborhood of that name. It had darker hues, in both the music and the lyrics. While some in Tucson have referred to Edge of the Sun as "Feast of Wire Part II," its tone is lighter, a mood immediately apparent in the power-pop opener, "Falling from the Sky." Burns's voice continues to grow into a fabulously expressive instrument, and never more so than in the closer, "Follow the River." While not the raw, unbridled weirdness that Hot Rail wasthe first time the sobriquet *cinematic* was applied to Calexico's music—Edge of the Sun is a brighter, more tuneful record, and the best since Garden Ruin (2006), the only album in the band's catalog not produced by Schumacher.

A raftful of guests appear on *Edge of the Sun*, including Neko Case, who adds alternately ghostly and strident harmony vocals to "Tapping on the Line." Ben Bridewell (Band of Horses) adds urgent vocals to "Falling from the Sky," and the Greek group Takim tense, swirling rhythms to "World Undone." Sam Beam of Iron & Wine appears on a number of songs, including "Bullets & Rocks."

"One day," Burns says, "Sergio was like, 'Hey, let's ask Neko [to be on the record, she's coming to town with the New Pornographers. And so she showed up, which is kind of stunning, because I know she's super busy. Sam Beam is also super busy, with his five kids and doing his own music, and yet he was the first that came back super fast and sent some incredible vocals and a really nice kind of outro to 'Bullets & Rocks,' repeating the words 'A future is promised to you. We'd been talking about trying to get together anyways, to do some more work as Calexico and Iron & Wine, to commemorate the tenth anniversary of the EP we did." (Calexico and Beam together recorded an EP, In the Reins, in

"Touring last summer, we knew we



Dynamic Duo: Joey Burns and John Convertino.

had a day off in Athens, Greece, and we had a contact with a studio there, and on their website they've got this performance by this Greek band Takim. They are incredible musicians. And Eric Burdon happened to be there too, playing at this music festival, and he dropped by. So yeah, it was super cool, a lot of fun stuff. And that's just what happens, I think. It's nice to show that aspect of more of the touring side of Calexico on a record, because in the past it was maybe more separated."

Mixing in contributions from farflung guests guest proved no problem for Schumacher. "We put tape on the front end for most of it. We put it into the computer after that. But we really try to get the rhythm bed down to the two-inch. We have to go to Pro Tools because of all the collaborative stuff now. It makes it so easy for you to send a contiguous rough mix to somebody like Sam Beam and get back these awesome tracks. You're like, 'Wow, what a gift!' The collaborative long-distance thing is pretty exciting about the modern digital era."

One newish musical direction explored on *Edge of the Sun* is, of course—given that this is the age of EDM—electronics, which are used most effectively in the album's most traditionally titled tune, "Cumbia de Donde."

"I'm sure John and Sergio and myself were all going there with different ideas of what might come out of a writing and demo session," Burns says. "In the back of my mind, I'm thinking more electronics, or a little more ambience, or trying to infuse something more. Bands like Mexican Institute of Sound, Kinky, some of these bands infuse more electronics into the indie-rock realm, and so of course some songs [that] came out of Mexico had a little bit of that.

"We love bands that are good at combining some acoustic elements with their more electronic music. So this is us maintaining our identity, not trying to be something we're not. Keep John's drums in there, crank up a lot of percussion via the school of Latin Playboys and Los Lobos, lots of distortion on real instruments, but then add in vintage Atari-game synth sounds. This little keyboard is called a pocket piano. It's made in Brooklyn, and it's just a fun toy to play with, and it has that kind of toy-like character to its sound. I was hoping to get Manu Chao on that track, but then of course he's busy, and so our mutual friend Amparo Sanchez came in

and sang it."

Edge of the Sun is available as an MP3 download, a CD, and in a deluxe vinyl edition that features the 12 album tracks pressed on sky-blue vinyl, and six bonus tracks on side one of a greenish-

turquoise LP whose second side has an etching of what looks to be a wolf or a particularly large and vicious coyote. The band has simultaneously released almost all of their records as downloads, CDs, and LPs.

"It's nice that you bring this topic up, because vinyl sales are going up and the music business is rapidly going down," Burns says. "I think that with a band like ours, the aesthetics that we translate through the musicians, their instruments, the direction or type of songs to play and how we mix it up, are hard to convey to a public or in an interview—sometimes even on tour, because the dynamic level, at a festival especially, you gotta compete with other stages. But I'm excited to tour and play and get the vinyl out there, man, because we love it.

"We've worked consistently with JJ Golden at Golden Mastering since the beginning, and I think the kind of music we play just does well, does better on vinyl. And sure, yeah, we want the best quality. We're not trying to compress things and crank the volume. We love jazz records. We love classic records and other musicians, bands like My Morning Jacket or Wilco, that are young and really into the fidelity and want the best quality possible. It's something, for sure, that's important to us."

### MICHAEL FREMER

# Bel Canto Design Black

### AMPLIFICATION SYSTEM

We review individual components. We've made an exception for the Bel Canto Black system because it deserves to be evaluated as such. It consists of three dense, almost identically sized cases of black-anodized aluminum. One, the ASC1 Asynchronous Stream Controller, is what in a conventional system would be called a "preamplifier." The other two, a pair of MPS1 Mono PowerStreams, would in a conventional system be called "monoblock power amplifiers."

However, the Black does not comprise conventional components. The ASC1 accepts AES, two S/PDIF, two ST, and TosLink digital audio inputs. It also includes an Ethernet UPnp/DLNA Media Renderer Input and a USB Type 2 audio input. There's also a stereo analog input (RCAs) that can be used for a surround processor, a conventional preamplifier, or even, the brochure assures, a phono preamp. A high-performance A/D converter chip, located within 2cm of the analog input, converts the analog signal to 24-bit/192kHz digital.

The ASC1 outputs the incoming digital signal at the latter's native resolution via a pair of StreamLink glass optical ST jacks. A pair of XLR AES digital jacks can drive a digital subwoofer or an outboard DAC. Bel Canto supplies lengths of fiber-optic cable to connect to the MPS1 inputs, a hefty remote control of milled and black-anodized aluminum, and an iPhone/iPad app through which everything can be wirelessly controlled via Bluetooth.

In other words, whether you live in the world of analog or of digital audio, or in both, the Black is ready for you.

#### Tech

The ASC1's digital inputs are isolated from chassis ground and the Ultra-Low-Noise (ULN) master clocks retime inputs, stripping out noise and jitter. You can choose among three Custom Time Correct impulse response, apodizing digital reconstruction filters, which will be most critical for CDs and CD-resolution files, or you can use the default FIR filter. A custom 32/64-bit DSP processor operating at 500MHz controls a 32-bit volume/balance control, the Asynchronous digital interface, the filters, and the generation of the Black's digital output, wherein the output is retimed using a high-speed memory chip coupled directly to the ULN master clocks.

The MPS1 monoblock has both balanced analog and ST-optical digital inputs. The latter can be assigned to either left or right channel data and asynchronously retimes the digital signal with the ULN master clock located in close proximity to the DAC. According to Bel Canto, the ULN master clock, located adjacent to the DAC, produces fewer than 35 femtoseconds of phase noise, which the company claims produces an analog signal of "utmost purity," free from "digital" noise.

The fully balanced DAC, which Bel Canto says combines "the best of multi-bit and delta sigma technologies," outputs a high current that's directly coupled to Bel Canto's

### SPECIFICATIONS

# ASC1 REMOTE-CONTROLLED DIGITAL ASYNCHRONOUS STREAM CONTROLLER.

Analog inputs: 1 RCA. Digital inputs: 2 S/PDIF, 2 ST fiberoptic, 1 TosLink, 1 AES/EBU, 1 Ethernet, 1 USB. Digital outputs: 2 ST fiber-optic, 2 AES/EBU balanced XLR. Maximum data input rates: 24-bit/192kHz (AES, XLR, S/PDIF 1 & 2, ST Fiber, TosLink), 24-bit/192kHz and DSD64 (UPnP/DLNA Ethernet). ULN master clock phase noise: <40 femtoseconds RMS, 100Hz-1MHz. Analog input: 2.5V RMS RCA. Input

impedance: 12k ohms RCA. THD+N: 0.003%, 2.5V RMS in, 1kHz. Dynamic range: 106dB, A-weighted, 20Hz-20kHz. Power usage: 8W (on), 0.0W (off). Power requirements: 100-120 or 230-40VAC, 50 or 60Hz (internally set).

Dimensions 18.8" (483mm)

Dimensions 18.8" (483mm) by 3.8" (97mm) H by 11.9" (305mm) D. Weight: 40 lbs (18.2kg).

Serial number of unit reviewed: ASC18154 Price \$20,000.

MPS1 CLASS-D MONOBLOCK POWER AMPLIFIER Inputs:

ST fiber, analog balanced XLR. Outputs: 1 pair 5-way binding posts. Output power: 300W into 8 ohms, 600W into 4 ohms, 1200W into 2 ohms (all 24.8dBW). Frequency response: OHz-50kHz, -3dB, all loads. Signal/noise: N/A. THD+N: <0.001% 1W, 1kHz, 4 ohms. Balanced input impedance: 20k ohms. Analog input voltage for max output: 5V RMS. Damping factor: >1000. Dynamic range: stream input, 128dB; analog input, 108dB. ULN master clock phase noise: <40 femtoseconds

RMS, 100Hz-1MHz.

Dimensions 18.8" (483mm)
W by 3.8" (97mm) H by
13.9" (356mm) D. Weight:
45.1 lbs (20.5kg)
Serial numbers of units
reviewed MPS09134,
MPS16134.
Price \$15,000 each.
System Price \$50,000.
Approximate number of
dealers: 4.

Manufacturer Bel Canto Design, Ltd., 221 First Street N.,

sign, Ltd., 221 First Street N., Suite 300, Minneapolis, MN 55401. Tel: (612) 317-4550. Fax: (612) 359-9358. Web: www.belcantoblack.com.



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The Black system includes an Ethernet input

uses naked Z-foil resistors for voltage conversion and, for the analog filter, precision film capacitors. This stage drives a discrete voltage gain stage that outputs a fully balanced, 18V, high-current drive to a custom version of the Hypex class-D analog nCore module designed by Bruno Putzeys that's said to be capable of producing peaks of 40 amps into 2 ohms using only four high-current output MOSFETs that can deliver up to 1200W. Hypex supplies Bel Canto with customized modules designed specifically for the Black. The internal wiring to the WBT NextGen speaker connectors is by Kimber Kable.

The MPS1's power supply includes a custom internal AC power conditioner and a multistage hybrid switching/linear architecture with what Bel Canto claims is an "audio grade" switching supply dedicated to the high-power section, and the low-noise linear supplies used for all small signal application, both analog and digital.

To ensure the best performance from the master clocks and analog circuitry with the least possible noise, the ASC1 and MPS1 are enclosed in resonance-free mechanical structures carved from solid blocks of aluminum with



constrained-layer damping. In the MPS1, each subfunction is encased in its own compartment, with the analog stages carefully "cocooned" from digital pollution.

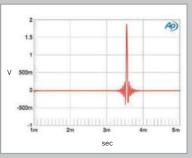
### And it all means ...

... that the Black doesn't need an outboard DAC or

### **MEASUREMENTS**

s Bel Canto Design's Black is a complex product—both the ASC1 control unit and MPS1 monoblocks have both digital and analog inputs — I performed most of my measurements with the control unit and amplifiers connected with the ST-optical datalinks, with checks of the analog inputs of the amplifiers. I measured the Black using the digital and analog outputs of my Audio Precision SYS2722 system (see www. ap.com, and the January 2008 "As We See It" at www.stereophile.com/content/measurements-maps-precision), and my 2012 MacBook Pro running on battery power to feed the USB input. Because the MPS1 is a class-D design. Lused an Audio Precision AUX-0025 passive low-pass filter ahead of the analyzer, which eliminates noise above 200kHz. (At the Black's speaker terminals, without the filter and with no signal, there were 300mV of ultrasonic noise with a center frequency around 453kHz in the left channel, and 478mV of noise centered on 460kHz in the right channel.) After an hour of running at moderate power levels into 8 ohms, the chassis of the two MPS1s were warm to the touch, at 94.6°F (34.8°C).

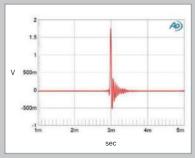
I didn't test the Ethernet input but all the ASC1's other digital inputs locked to data with sample rates ranging from 44.1 to 192kHz. Apple's USB Prober utility identified the Black as "Bel Canto uLinkUSB 2.0 Audio Out," and confirmed that the USB input operated in the optimal isochronous asynchronous mode. Measured at the MPS1s' speaker terminals, the ASC1's digital inputs preserved absolute polarity; and with the volume control set to "100," data with a level of -20dBFS gave rise to an analog signal of 12.08V RMS into 8 ohms. This suggests that the volume control shouldn't be used above "94" to avoid clipping the amplifiers. The control



**Fig.1** Bel Canto Black, digital input, Filter Off, impulse response at 44.1kHz (4ms time window).

itself operates in the digital domain and offers accurate 0.5dB steps.

The Black's reconstruction filter offers three different rolloffs, as well as a setting called Filter Off. Fig.1 shows the impulse response at a sample rate of 44.1kHz with Filter Off; this is a conventional, linear-phase, half-band impulse response, with the ringing symmetrically placed around the single sample at OdBFS. By contrast, Filters 1–3 offer minimum-phase impulse responses, with (almost) all the ringing following the high sample and the amount of ringing decreasing as the number of the filter increases. Fig.2, for example, shows the impulse response



**Fig.2** Bel Canto Black, digital input, Filter 2, impulse response at 44.1kHz (4ms time window).

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expensive analog signal cables (other than to connect an analog component). Yes, it can decode DSD files. What's more, its ST fiber-optic interconnect means that the ASC1 can be placed more than 300' from the MPS1s with no loss of quality, no ground loops, and no interference of any kind.

The three-component package costs a total of \$50,000: \$15,000 each for the MPS1s, \$20,000 for the ASC1. That makes it an attractively priced package in my corner of the high-performance audio world, where you can easily pay \$50,000 for a pair of monoblocks that output far less than 1200Wpc into 2 ohms—and you'd then have to add a DAC and cables.

### **Setup and Use**

The Black system was easy to set up—even an analog person can manage it. In fact, I had both my reference and Bel Canto systems

available. Switching between them to make comparisons required only that I switch power cords and speaker cables between amps.

The ASC1 has a large, red-lettered LED display on its faceplate and, at the front of its top panel, a single, multi-



The ASC1 can be controlled with an iPhone app.

function button/wheel. Rotate it to adjust volume, or briefly press down and rotate to change inputs. Hold the button down for a few seconds to enter Program mode; to exit that mode, hold it down again.

Most buyers will use the Black's remote control or iPhone app. The latter is the easiest, most intuitive way to operate it: You can adjust the volume using the virtual wheel, select among inputs, soft- or hard-mute the output, change the ASC1's display, choose among the filter options, reverse its polarity, adjust the balance, name the inputs, and delete those you don't use.

### Consider what you can do

Here's what I ended up doing: First, I ran the Tape Out of my darTZeel preamplifier into the ASC1's analog inputs. That way, I had access to and could digitize (for sonic better or worse) the three turntables and three phono

preamplifiers currently connected to my system.

With the help of John Stronczer, Bel Canto's CEO and Chief of Design, I set up an Ethernet hub, and connected to it the Ethernet cable from the hard drive of my Meridian Digital Media System (formerly the Sooloos) and one from

#### measurements, continued

of Filter 2.

White noise sampled at 44.1kHz reveals that the Filter Off filter has the usual fast rolloff above the audioband (fig.3, red and magenta traces), with a small rise in the ultrasonic noise floor centered on 65kHz.1 Bel Canto claims that Filters 1-3 are "apodizing" types, meaning that they eliminate ringing at half the sample rate. The red and magenta traces in fig.4 show the Black's output with Filter 1 selected. You can see that it is indeed an apodizing type by the sharply defined null at exactly half the sample rate (vertical green line). Filters 2 and 3 are identical other than the fact that the rolloff starts a

in the stopband above the green line is lower in amplitude. The blue and cyan traces in these graphs are the output with a full-scale tone at 19.1kHz; all four filters completely suppress the ultrasonic image at 25kHz, and the distortion harmonics are all at or below -76dB (0.015%).

little earlier and the height of the lobe

Fig.5 is a more conventional way of showing digital frequency response, with Filter 1 and sample rates of 44.1, 96, and 192kHz. The overall shape of the response is the same at all three rates, with, as expected, a sharp rolloff at 20kHz at 44.1kHz. But the ultrasonic rolloff occurs a little earlier with the

higher rate. With 192kHz data, for example, the output is down by 9dB at 52kHz rather than at the expected 90kHz or so. This measurement was taken at the speaker terminals, so it includes the contribution of the class-D modules and, of course, the Audio Precision low-pass filter. However, repeating the measurements without the AP filter or with an analog input to the MPS1 gave the same result. The class-D stage has, of necessity, a curtailed ultrasonic response, due to the fact that it cannot have an infinitely high switching frequency; so while the full bandwidth extension offered by high sample rates can't be realized

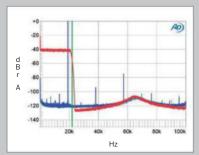


Fig.3 Bel Canto Black, digital input, Filter Off, wideband spectrum of white noise at -4dBFS (left channel blue, right cyan) and 19.1kHz tone at OdBFS (left red, right magenta), with data sampled at 44.1kHz (20dB/vertical div.).

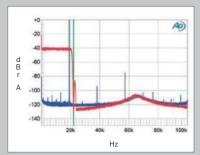


Fig. 4 Bel Canto Black, digital input, Filter 1, wideband spectrum of white noise at -4dBFS (left channel blue, right cyan) and 19.1kHz tone at OdBFS (left red, right magenta), with data sampled at 44.1kHz (20dB/vertical div.).

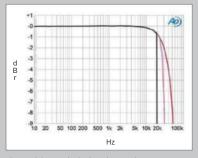


Fig.5 Bel Canto Black, digital input, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (1dB/vertical div.).

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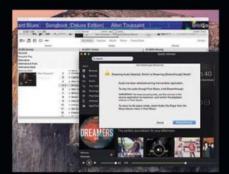
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my MacBook Air laptop. We then ran Ethernet cables from the hub to the Meridian's controller and to the ASC1.

I ran an S/PDIF cable from the Meridian to the ASC1 and an AES/EBU cable from the Simaudio Moon Evolution 650D CD transport-DAC, to have access to its transport.

After downloading the JRiver Media Center app to my iPhone (I already had it on my MacBook Air), I had, from my listening chair, access to hundreds of high-resolution files on an external hard drive connected to the computer, almost 3000 CDs and hi-rez files on the Meridian—and, now that Tidal is implemented on the Meridian, access to everything streamable at CD resolution from Tidal. And, of course, I can get up and play LPs from my choice of three turntables—all of this adjustable, selectable, and switchable via three iPhone apps. My friends, that is music power!

While I found it mostly smooth sailing, at one point the Ethernet connection between the ASC1 and the JRiver player on my computer broke, making inaccessible hundreds of great files I'd wanted to play from an external drive—all I got was sound from the computer speakers. Nothing I could think of doing solved the problem. I ended up shutting down and restarting the ASC1, but only after half an hour of hair-pulling frustration.

Computer audio is still in a messy state of glitches, unreliability, and nonstandardization. It's something everyone involved in it faces, and everyone wishing to jump in will have to face. But that was the only glitch.

### Sound

My experiences with class-D amplification have been

mostly disappointing. If you read Kal Rubinson's¹ and my² reviews of the Anthem Statement M1 monoblock (\$6998/pair), both published in 2012, you'll find remarkably similar descriptions of its sound. Later that year, when I reviewed the Mark Levinson No.53 class-D monoblock (\$50,000/pair),³ I said: "As seems to be the case with switching amps, no matter how carefully designed, the higher in frequency the music goes, the more problems there are."

I spent a great deal of time with the Black, listening to digital and analog sourced recordings, including many of the same ones I'd listened to through the No.53s. This made a few things obvious. First, this system is the best-sounding implementation of class-D technology I've heard, especially with digital sources. After every digital listening session, I concluded, "If you're going to go digital, this is the way to go"—by which I meant: Keep the signal in the digital domain until just before it's sent to the speakers.

Through the Black and the first of its three filters, highresolution files and CDs produced the full measure of dynamic authority always promised by digital but seldom delivered. The Black's re-creation from digital sources of three-dimensional imaging and soundstaging was the most intense and compelling I've heard, with well-carved images presented against "black" backdrops.

From the Meridian Digital Media System I played

### measurements, continued

with the Black, it looks as if Bel Canto's design team has achieved a careful balance of what is possible. Filters 2 and 3 offer earlier rolloffs with 44.1kHz data, trading off the slight loss of top-octave response against the better timedomain behavior of these filters.

To test the resolution of the Black's digital inputs, I set the volume control to "90," equivalent to an output power of 165W into 8 ohms. Under this condition, increasing the bit depth from 16 to 24 with dithered data representing

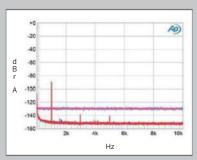


Fig. 6 Bel Canto Black, digital input, spectrum with noise and spuriae of dithered 1kHz tone at -90dBFS with: 16-bit data (left channel cyan, right magenta), 24-bit data (left blue, right red) (20dB/vertical div.).

a 1kHz tone at -90dBFS dropped the noise floor by 23dB (fig.6), which is equivalent to a resolution of almost 20 bits: superb performance. Referenced to the Black's specified clipping power, this would increase to 21 bits, though I didn't test that due to my concern that I might inadvertently break the amplifier before I finished the measurements. This graph was taken with AES/EBU data; repeating the test with USB data gave the same result, indicating that the USB input correctly handles 24-bit data. With its superb low-level linearity and low noise, the

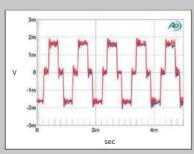


Fig.7 Bel Canto Black, digital input, waveform of undithered 1kHz sinewave at -90.31dBFS, 16-bit data (left channel blue, right red).

Bel Canto had no problem dealing with an undithered 16-bit tone at exactly -90.31dBFS (fig.7). The data describe three DC voltage levels; these were clearly evident, and the waveform was nicely symmetrical about the time axis. With undithered 24-bit data, the result was a clean sinewave relatively free of noise (not shown).

Tested for its rejection of word-clock jitter with 16-bit J-Test data (fig.8), the Black produced no visible jitter-related sidebands, and the odd-order harmon-

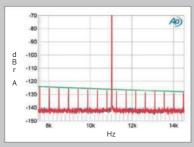


Fig.8 Bel Canto Black, digital input, high-resolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit data from SYS2722 via AES/EBU (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, 43.5kHz.

 $<sup>1 \</sup> See \ www.stereophile.com/content/anthem-statement-m1-monoblock-power-amplifier.$ 

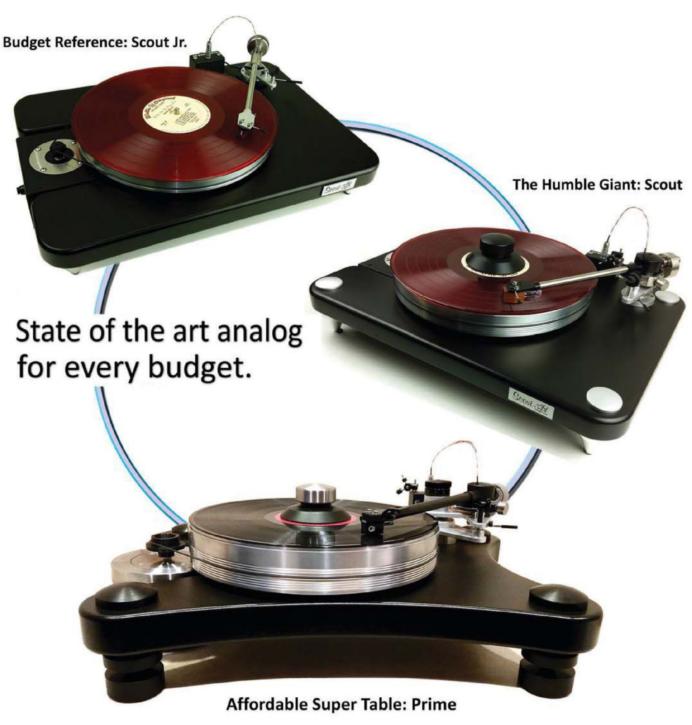
 $<sup>2</sup> See \ www.soundandvision.com/content/anthem-statement-m1-amplifier.$ 

<sup>3</sup> See www.stereophile.com/content/mark-levinson-no53-reference-monoblock-power-amplifier.



### **VPI Industries**

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CD-resolution files of Bob Dylan's Time Out of Mind (Columbia CK 68556) and Highway 61 Revisited (Columbia CK 9189), which usually sound flat and drab. They were still drab, but the amps and DAC (which can't be separated) suppressed the expected harshness, grain, and general unpleasantness, leaving a refreshing clarity of instrumental line. The strummed guitar and piano in Highway 61 Revisited, which usually sound like indistinguishable mush compared

to the LP, were reasonably well separated. I could actually hear the skin on the tambourine in the right channel. Vocal sibilants didn't overwhelm, as they usually do when I listen to a digital version of this album, and Dylan's voice had a presence that was pleasingly compact, three-dimensional, and well-focused.

The Meridian offered surprises wherever I went: the CD-sourced Saturday Night Live: The Musical Performances, Volume 1 (CD, Dream Works), for instance, which had always sounded mediocre to me, now drew me in: from first (Paul Simon singing "Diamonds on the Soles of Her Shoes") to last (Randy Newman singing "I Love L.A.)," I listened straight





Both the ASC1 and MPS1 offer analog inputs but the units are connected with ST-optical digital links.

through to all 15 tracks. Why? For one thing, as you'd expect from a class-D amp, the bottom end was fully expressed and robust, which provided a taut rhythmic ride. But

beyond that, there was imaging and staging, and though the picture was generally dark, there was a welcome lack of grain, glaze, and glare.

Like the Mark Levinson No.53's bottom end, the Bel Canto Black's was fast, well controlled, and fully extended. I called this "depth-charge bass" in my review of the No.53, though I thought it could have used some more weight,

### measurements, continued

ics of the LSB-level, low-frequency squarewave were all close to the correct levels (indicated by the green line). This graph was taken with AES/EBU data; USB data gave an identical result, and with 24-bit data, the noise floor was clean and free from spuriae (not shown).

Turning to the Bel Canto Black's performance with analog signals, these are digitized by the ASC1. As the ASC1 has AES/EBU outputs as well as the ST-optical outputs to feed the MPS1s, I could examine the efficacy of its digitization by looking at the digital data directly. The ASC1's A/D converter op-

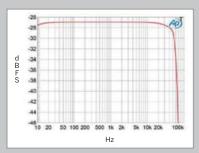


Fig.9 Bel Canto ASC1, analog input, A/D frequency response (left channel blue, right red) (2dB/vertical div.).

erates at a sample rate of 192kHz and a 24-bit word length. The maximum volume control setting was "110," with settings above "100" applying gain in the digital domain. At this setting, it took an 830mV signal at 1kHz to reach -0.1dBFS. Reducing the volume appears to increase the digital headroom. Fig.9 shows the ASC1's analog-input frequency response, measured in the digital domain. The output is down by 3dB at 53kHz, the fairly slow rolloff suggesting good time-domain behavior.

The ASC1's single-ended analog

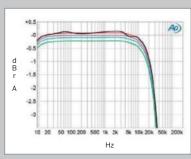


Fig.10 Bel Canto MPS1, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (0.5dB/vertical div.).

input impedance was 9k ohms at all audio frequencies, this a little on the low side for use with tubed source components. The MPS1's balanced analog input impedance was 18k ohms at low and middle frequencies, dropping to 2300 ohms at 20kHz. Both components' analog inputs preserved absolute polarity (ie, were non-inverting) at the factory default setting. The MPS1's audioband output impedance was very low, at 0.09 ohm (including 6' of speaker cable). As a result, the modification of the amplifier's frequency response, due to the interaction between this impedance and that of our standard simulated loudspeaker, was minuscule

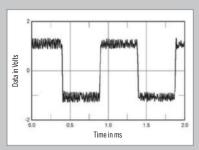


Fig.11 Bel Canto Black, small-signal, 1kHz squarewave into 8 ohms.

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and definitely more body. The Black's bass weight and body were ideal. When I switched to "I Want to Be Your Man," from the Rolling Stones' *Singles Collection: The London Years* (3 CDs, ABKCO 1218-2) I found the articulation and texture of Bill Wyman's bass to be better than I'd ever heard it. I liked how kick drums sounded through these amps—the bottom octaves weren't overdamped, and drumskin textures didn't disappear into dryness.

While in 2012 I'd said, "If you like your midband rich, you won't get it from the No.53," in 2015 I did get a rich midband from the Bel Canto Black. And while I'd lauded the No.53 for its "overall transient precision, superb if not unprecedented speed and clarity, resolution of inner detail, and black backgrounds," I also complained about "a dose of listening fatigue partly caused by high-frequency hardness, and partly by the overall dryness, which also produced well-rendered outlines but little in the way of nuanced textures: all outer shell, very little creamy center." Not so here. The Black's midrange was reasonably rich, and there was no high-frequency hardness.

But I'll stick with "the higher in frequency the music goes, the more problems there are." Bel Canto apparently solves such problems withholding the upper octaves—or at least, that's how it sounded. No doubt the measured response will be flat.

Air and space were in short supply, as was generous or even perceptible instrumental decay—things that are also in short supply on "Red Book" CDs, so I hardly missed them. But the Black's suppression of all the upper-frequency hash and digititis of CDs, combined with well-finessed transients that were neither too hard and etched nor too soft and mushy, an attractive midrange, and a full-bodied bottom end, made it no wonder that I found CDs so engaging.

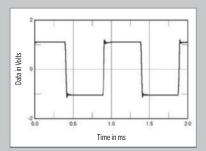
Were I a "Red Book" guy, I'd consider chucking whatever I had and buying a Black—and that would be true even were I a classical-only "Red Book" guy. I played straight through a disc of Antál Dorati leading the London Symphony in music by Schoenberg, Webern, and Berg (CD, Mercury Living Presence 432006). Everything I can't stand about CD sound had gone missing; what was left was well rendered, dynamically, texturally, and, most important, harmonically—though with reduced air and less-than-generous upper-octave extension. I'll take that, every time, over sizzle and tizz—of which there were none.

I did experiment with the Black's minimum-phase apodizing filters—Filter 1 (flat to 20kHz), Filter 2 (–3dB at 20kHz), and Filter 3 (–9dB at 20kHz)—and even turned off the filtering altogether (Standard Linear Phase). For CD playback, I preferred Filter 1. I'm not suggesting that these days I can hear anything above 20kHz or even close to it, as I once could (I used to be able to hear the 15.734kHz tone from an NTSC TV's flyback transformer), but with no filter, the top end had a slight added crispiness that produced nothing useful.

### measurements, continued

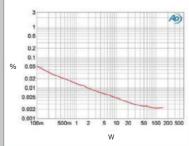
(fig.10, black trace). The data plotted in this graph indicate that the MPS1's response is down by 1dB at 20kHz, -3dB at 31kHz, and -9dB at 50kHz. This ultrasonic rolloff was the same driving the ASC1's analog input and measuring at the MPS1's speaker terminal, nor did it change with different settings of the ASC1's volume control.

Fig.11 shows the Black's reproduction of a small-signal, 1kHz squarewave into 8 ohms. The tops and bottoms of the waveform are obscured by the ultrasonic switching noise generated by the class-D output stage. Repeating the measurement with the Audio Precision low-pass filter ahead of the analyzer gave the well-shaped waveform in



**Fig.12** Bel Canto Black, small-signal, 1kHz square-wave into 8 ohms with Audio Precision low-pass filter.

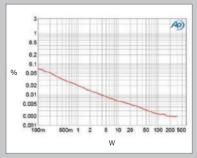
fig.12. I suspect that the small amount of overshoot and ultrasonic ringing is due to the ASC1's A/D converter. A 10kHz squarewave (not shown) was reproduced with just one cycle of ringing, and lengthened risetimes associated with the ultrasonic rolloff seen in fig.10. Even with the Audio Precision filter's rolloff, there is enough leakage of the output stage's switching noise to interfere with both the unweighted wideband and audioband signal/noise ratios. The A-weighted S/N ratio of the MPS1 alone, taken with the analog input shorted to ground and ref. 2.83V into 8 ohms, was 79.2dB; that of the complete Black with its analog input shorted but its volume control set to



**Fig.13** Bel Canto Black, distortion (%) vs 1kHz continuous output power into 8 ohms.

"110" was 60.2dB. Channel separation, measured at the ASC1's analog inputs, was >100dB below 2kHz, and still 70dB in both directions at 20kHz.

I tested the MPS1's clipping power by driving it directly, to avoid the possibility of overdriving the ASC1's analog input A/D converter and confusing the result. The Black is specified as delivering 300W into 8 ohms, 600W into 4 ohms, or 1200W into 2 ohms, all equivalent to 24.8dBW. However, in this continuously driven condition, the amplifier's protection circuit operated at a level 3dB below the specified maximum power. This can be seen in figs. 13 and 14, which respectively plot the THD+noise percentage against



**Fig.14** Bel Canto Black, distortion (%) vs 1kHz continuous output power into 4 ohms.

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### **High-resolution files**

Not surprisingly, really well-produced hi-rez files, whether sourced from a digital or an analog master, delivered more graceful transient attacks, greater spatial contexts, and generally fewer cardboard-cutout pictures.

I have some legally obtained 24-bit/192kHz master files from Blue Note Records, and played half a dozen of them while evaluating the Bel Canto Black. Cassandra Wilson's essential album *New Moon Daughter* at 24/192 was a real treat, particularly its robust, well-textured bottom end. Still, I found the guitars somewhat lacking the sparkle and air I'm used to hearing; decays were usually fast fades to black, and Wilson's voice was somewhat closed in, hanging starkly in space unsupported by air. I'm used to more generous sustain, and more air around instruments and voices. Reverb tails were shortened. Still, the "black" backgrounds and authoritarian bass control were more than ample compensation. It's all about being drawn into the music—if the CD-resolution file managed to do that, you can be sure the hi-rez ones did too.

These minor acts of omission or commission aside, the Black's sonic picture was velvety-rich, three-dimensional, and free of grain, glare, hardness, and—especially—the haze that had so bothered me in the sounds of the other class-D amps I've reviewed.

### **Digitizing vinyl?**

Playing vinyl, using the ASC1's analog input, was interesting. *Shadows in the Night*, Bob Dylan's tribute to Frank Sinatra, was recorded at 24/192 but never mastered (CD, Columbia 57962). Instead, the reference CD that engineer Al Schmitt produced for Dylan to listen to in his car ended

### ASSOCIATED EQUIPMENT

Analog Sources Continuum Audio Labs Caliburn turntable, Cobra tonearm, Castellon stand; Kuzma 4Point, SAT tonearms; DS Audio DS-W1 optical, Lyra Atlas & Etna, Miyajima Labs Zero (mono) & Madake, Ortofon Anna cartridges.

Digital Sources Simaudio Moon Evolution 650D transport-DAC, Lynx Hilo ADC-DAC, Meridian Digital Media System, Pure Vinyl & Vinyl Studio software.

**Preamplification** Ypsilon MC-10L & MC-16L step-up transformers; darTZeel NHB-18NS, Luminous Audio Techology Arion, Ypsilon VPS-100 preamplifiers.

Power Amplifiers darTZeel NHB 458 monoblocks.
Loudspeakers Wilson Audio Specialties Alexandria XLF.
Cables Interconnect: Snake River Audio Boomslang S/
PDIF, Stealth Sakra & Indra, TARA Labs Zero Evolution &
Zero, Teresonic Clarison Gold, Wireworld Platinum Eclipse.
Speaker: TARA Labs Omega Gold, Wireworld Platinum
Eclipse 7. AC: Shunyata Research Alpha Analog HC, Alpha
Digital, ZiTron Alpha Analog.

Accessories Shunyata Research Hydra Triton & Typhon power conditioners (2 sets); Oyaide AC wall box & receptacles; ASC Tube Traps; RPG BAD, Skyline & Abffusor panels; Stillpoints Aperture Room panels; Synergistic Research UEF products (various); Symposium Rollerblocks & Ultra platform; HRS Signature SXR, Stillpoints ESS, Finite Elemente Pagode stands; Audiodharma Cable Cooker; Furutech, Stein Audio demagnetizers; Furutech deStat; Loricraft PRC4 Deluxe, Audio Desk Systeme record-cleaning machines.—Michael Fremer

### measurements, continued

output power into 8 and 4 ohms. The traces stop at 149.5W into 8 ohms (21.75dBW) at 0.00223% THD+N, and at 293W into 4 ohms (21.67dBW) at 0.002%, which in both cases was where the protection circuit went into action. Into 2 ohms (not shown), the protection cut in at 545W (21.5dBW), at 0.015%.

But below the continuous powers where the protection operated the MPS1 offered very low distortion. The lower trace in fig.15 shows the

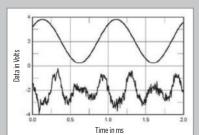
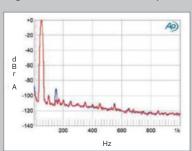


Fig.15 Bel Canto Black, 1kHz waveform at 59W into 4 ohms, 0.005% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

distortion+noise waveform at 59W into 4 ohms. I had to average 64 captures to reduce the noise to the point where the distortion waveform emerged from the higher-level noise; it is primarily third-harmonic in nature. This was with the review unit designated as the left channel. As can be seen in fig.16, the other sample (red trace) had just a trace of second-harmonic distortion. Intermodulation distortion at a fairly high power was also very low (fig.17), the 1kHz difference compo-

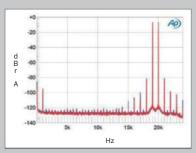


**Fig.16** Bel Canto Black, spectrum of 50Hz sinewave, DC-1kHz, at 86W into 4 ohms (linear frequency scale).

nent resulting from an equal mix of 19 and 20kHz tones lying at -96dB (0.0015%).

Overall, I was very impressed by the Bel Canto Black, especially with its behavior as a D/A converter that is effectively capable of driving loudspeakers. Once I have finished the review of another amplifier I have been working on, I am going to set up the Black in my own system for a listen.—John Atkinson

1 This test was suggested to me by Jürgen Reis of MBL.



**Fig.17** Bel Canto Black, HF intermodulation spectrum, DC-24kHz, 19+20kHz at 86W peak into 4 ohms (linear frequency scale).









Sonja 1.2



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up being the "as-is" master, and the vinyl was cut from it. I knew that when I wrote my review of the album for AnalogPlanet, but at the time, I'd promised my sources not to reveal it. Yet the vinyl sounded far more three-dimensional, harmonically and texturally more convincing, so that's what I wrote. In comparison, the CD sounded drab and flat.

Now, playing the LP mastered from a CD-resolution source but digitized by the Black at 24/192 and comparing it to the CD was doubly interesting. Though far better than I remember it sounding through my reference system, the CD was still spatially flat and harmonically drab compared to the digitized LP—for example, the horns in "The Night We Called It a Day" and, especially, Dylan's voice throughout. On the CD, both sound harmonically monotonous, texturally flat, and pressed up against the speakers. The "24/192 vinyl" for the most part preserved the space, the pedal steel's natural ebb and flow, and especially the textures of the trumpet and Dylan's pleasantly weathered voice. If these are "additive distortions," I don't care.

I played dozens of LPs with the Black and also 24/96 rips from vinyl that I've played many times, here and elsewhere. I concluded that, for better or worse, the Bel Canto Black system's sonic signature, more than the digitization, was what dominated the sound, though there's still something "different" about digitized analog, just as there's something "different" about class-D amplification. To paraphrase what Supreme Court Justice Potter Stewart famously said about obscenity: I can't tell you what it is, but I know it when I hear it. Here, though, compared to my other experiences of class-D, I very much enjoyed listening.

### **Conclusions**

Black by Bel Canto Design is a breakthrough product and, because of its sound quality, the most intriguing one I've reviewed—and by now, that's a lot of products. Its operating flexibility, system integration, and ease of use alone make it a must-experience product for audio enthusiasts looking for a unique, 21st-century listening adventure.

If you're a digital-only audiophile, particularly a 16-bit/44.1kHz "Red Book" one, you might find the Black's the most compelling digital sound yet. I did, and I don't like CDs at all. Yet I found some respite with the Black, and not because it obscured the problems many of us have with CDs—in fact, the opposite.

The Black's reproduction of hi-rez files produced the expected sonic benefits. Live digitized vinyl playback sounded more similar to than different from hi-rez digital files, but through the Black, all of these formats sounded very different from how they sounded through my reference non-class-D system: CDs for the better, the others less so. Class-D amplification sounds fundamentally different. In the case of the Bel Canto Black, it can be credibly argued that it can sound better.

If you're a committed analog listener, you're probably going to want to listen to vinyl in the analog domain. (But if you have an opportunity to hear an LP through this system, do it.) Otherwise, here, finally, is a class-D product that, though sounding definitely different from the older technologies, makes a strong case for equality. That's saying a lot.

4 See www.analogplanet.com/content/shadows-night%C2%A0%C2%A0another-side-bob-dylan.



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### **HERB REICHERT**

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s an audio scribe, the fiercest demons I wrestle are *beliefs*—yours and mine; those of my friends, my editors, my fellow reviewers; and those of the engineers and promoters of the products I write about. Sometimes the force of these rabidly held and (mostly) conflicting beliefs paralyzes me with self-doubt: What do I know? What makes *me* qualified to listen and judge?

At the start of every review, the white noise of these diverse creeds fills my head and prevents me from listening in a relaxed and open state of mind. If the product performs amiably right out of the box, I eventually settle down, stop worrying what others might think, and enjoy myself. But my own audio beliefs—my checklists of musical and audio *needs*—never go away. I don't think they should.

Most audiophiles believe that reviewers can remove their ideological lenses as easily as doffing a pair of 3D glasses—and then, on their readers' behalf, perceive a product's sound as it actually is. That is not possible, nor is it desirable. We all need to remain submerged in the pleasurable *identities* of our audio beliefs, because these constantly morphing predispositions anchor us and tether us together. They become our

My job as a reviewer is to remember what you might believe and prefer.

shared tribal codes.

This is why you need me to always be just Herb—so that you can be just you. This is important—it's the only way you can consistently measure the ideological space between us, then apply that measure to the words I write. As you read this issue's Herbprattle, remind

yourself that I place exceptionally high value on corporality, texture, and the richness of instrumental and vocal tones. While listening to recorded music, I need to sense the artists' intentions and feel a contagious forward momentum. I value expansive soundstaging and precise imaging—but *only* if these effects feel tangible, natural, and whole. I believe that multimono is dangerous and louche. But if all you listen to is rock music, multimono may be all you've ever experienced. You may have never heard about binaural recording, or microphones in Blumlein pairs, or spaced omnis. You may never have experienced live acoustic (*ie*, non-amplified) music. You may not believe that artistic intentions can be audible. You

### SPECIFICATIONS

**Description** Solid-state integrated amplifier with tone and balance controls. optional plug-in DAC module (USB, S/PDIF coaxial, S/ PDIF TosLink, Bluetooth, FM), optional FM/AM tuner module, optional phono module, and powered output for IR repeater. Preamplifier inputs: 5 unbalanced (RCA), 1 balanced (XLR). Speaker outputs: 2 (selectable). Headphone output: dedicated, low impedance  $(<50 \text{ ohms}) \text{ on } \frac{1}{4}$ " jack.

Power output: >110W into 8 ohms (20.4dBW), >170W into 4 ohms (19.3dBW). Frequency response: 10Hz-100kHz, ±2dB line. Continuous current: >8.5 amps (sinewave). Maximum current: ±26 amps, current burst into 0.5 ohm. Output impedance: < 0.05 ohm, 20Hz-20kHz. THD: <0.002%. Signal/noise: >102dB, line input. Voltage gain: 33.3dB single-ended input, 27dB, balanced input. Input sensitivity: 410mV.

Crosstalk: -80dB at 1kHz. DC offset: <410mV. Operating voltages: 110V/230V, switchable. Power consumption: <20W at idle (no standby), 500W at full power. Dimensions 16.8" (430mm) W by 2.3" (60mm) H by 10.9" (280mm) D. Weight: 19.8 lbs (9kg). Serial number of un riewed 1349000088. ice \$2195. Options: Sequel Mk.2 phono stage, \$200; Ruby DAC, \$599; Ambit FM tuner, \$250. Price as reviewed: \$2794. Approximate number of dealers: 40.

Manufacturer Creek Audio Ltd., 12 Avebury Court,
Mark Road, Hemel
Hempstead, Hertfordshire
HP2 7TA, England, UK.
Tel: (44) (0)1442-260146.
Fax: (44) (0)870-6220846.
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US distributor: Music Hall,
108 Station Road,
Great Neck, NY 11023.
Tel: (516) 487-3663.
Web: www.musichallaudio.com.

may respond more than I do to dead-silent backgrounds and microscopic resolution. My job as a reviewer is to remember what you might believe and prefer.

I say all this because, when I began writing about Creek's Evolution 100A integrated amplifier, I was distracted by some of your firmly held notions, as revealed in the question, "So, Herb, which of all the integrated amps you've reviewed is the best?" Before I even opened the Creek's box, I could feel your need to know. Well, I'm sorry—I can't answer that question. I don't think, dream, or listen like that. In the real world of music listening (and of making love), there's no such thing as "the best." However, on behalf of each of your many diverse selves, I now promise to do my best to elucidate the character of yet another high-quality integrated amplifier.

### **Description**

Creek's website describes the Evolution 100A (base price \$2195) as "the most sophisticated and reasonably priced amplifier Creek has ever made." I suspect a big part of this sophistication and reasonable price may be the result of Creek's version of a class-G output stage, designed by senior engineer David Gamble. Mike Creek explained to me that, "Like the 50A, the 100A also uses Sanken STD03

Darlington power transistors, two of which operate as a traditional class-AB amplifier up to 25W. Above that, two more STD03s acting as lifters are switched in, to allow the signal to swing close to the higher-power supply rails. This power-supply strategy allows the 100A to deliver >110W/8 ohms (>170W/4 ohms) in the same chassis as the 55W/8 ohm 50A."

Like my faithful old Creek 4330, the newest Creek integrated has an attractive and subtly charming, asymmetrical faceplate. The volume knob on the right side is bigger than the selector knob on the left, and 1" closer to the Evolution 100A's right edge than the other knob is to the left. Between them is a symmetrical array of four buttons, a lighted display, and four more buttons. Incised directly behind and running under the volume knob is a vertical groove ½" deep, and at 1:30 on that dial is a delicately engraved Creek logo. Directly below the logo is the ½" headphone jack, and to its right the power button. Everything on the 100A's front panel is smart but just a bit off-kilter—like a good old-fashioned British murder mystery.

As I gazed at the Creek 4330 and 100A side by side, the 21st-century model looked considerably more gentrified, with more Whig appeal than my vintage and decidedly Tory 4330. Being a Husbandman, I wondered if the Evolution

### **MEASUREMENTS**

measured the Creek Evolution 100A using my Audio Precision SYS2722 system (see www. ap.com, and the January 2008 "As We See It" at www.stereophile. com/content/measurements-mapsprecision). Like many modern integrated amplifiers, the Evolution 100A covers all the bases in terms of sources and purposes, with USB, S/PDIF, and Bluetooth digital, FM, analog line-level, and analog phono inputs, as well as speaker, headphone, and line-level preamplifier outputs. To minimize strain on the amplifier's output stage, I measured the performance of the optional phono and D/A modules at the preamplifier outputs with the speaker outputs disabled.

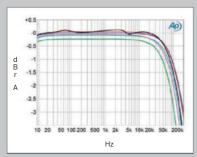
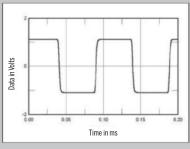


Fig.1 Creek Evolution 100A, volume control set to maximum, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (0.5dB/vertical div.).

The Evolution 100A is very similar to Creek's Evolution 50A, which Robert J. Reina reviewed in August 2013; it is instructive to refer to my measurements of that amplifier.1 Before measuring an amplifier, I precondition it at one-third power into 8 ohms for an hour, which, with a class-A/B design, puts the maximum thermal load on the output transistors, However, the Evolution 50A turned itself off after 20 minutes, its front panel displaying the message "Overheated" and the internal heatsinks at 140.9°F (61.3°C). By contrast, after 20 minutes running at one-third power, the Evolution 100A's heatsinks were a much cooler 109.8°F (43.3°C). As the 100A is a class-G design, I suspect that this was due to this power level lying below the point at which the high-power output devices turn on, and



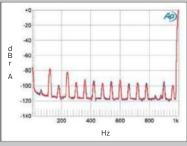
**Fig.2** Creek Evolution 100A, small-signal, 10kHz squarewave into 8 ohms.

so is actually not the most thermally stressful condition for the main output devices.

The review sample had a problem: the only front-panel button that worked was the Source selector. Fortunately, most of the functions could be operated with the remote control, though I couldn't access the Menu or Info screens from the remote and thus couldn't access them at all.

The volume control operated in accurate 1dB steps, and its -80dB setting was actually a full mute. Measured at the speaker outputs, the Evolution 100A's maximum gain into 8 ohms was 32.5dB for single-ended line-level sources, and, as with the 50A, the gain was 6dB lower for balanced sources

1 See www.stereophile.com/content/creek-evolution-50a-integrated-amplifier-measurements.



**Fig.3** Creek Evolution 100A, spectrum of 1kHz sinewave, DC-1kHz, at 1W into 8 ohms (linear frequency scale).

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2014/2015



The Ruby FM/DAC

module replaces the Line 5 inputs above

100A's sonic character had *evolved* in a similar fashion.

The 100A's rear panel is more ordinary

than its faceplate. Here are up to five unbalanced line-level inputs (RCA), one of them also offering the choice of balanced (XLR) operation. Another input can be configured as A/V direct. As a plug-in option, Line 1 can be configured for Creek's Sequel Mk.2 moving-magnet/moving-coil phono stage (a \$200 option). Similarly, the buyer may choose the dealer-installed Ambit FM/AM tuner (\$250), or the more fully featured Ruby plug-in DAC module, which includes an FM tuner (\$599). The Ruby replaces the Line 5 inputs and features two 24-bit/192kHz coaxial and two TosLink S/PDIF digital

inputs, 24/96 USB, FM, and Bluetooth. As I type, I'm enjoying WNYC via the Creek's wire antenna (included).

#### Music

Collecting recordings of music provides multiple escape routes from the sufferings caused by vain underclass toil. Consequently, I am a dedicated seeker of the time-wasting, mind-numbing excitements generated by scouring eBay for rare CDs, old microgrooves, and hot stampers. I especially enjoy showing off and playing for friends my hard-won finds. Speaking of which...

I was entertaining some flannel-shirted, fear-the-beard guys and their pierced, blue-haired partners when, after explaining the virtues of never wearing socks that match, one

### measurements, continued

rather than 6dB higher, as is usually the case. The amplifier preserved absolute polarity for both single-ended and balanced inputs at all three outputs (speaker, headphone, preamplifier), meaning that the XLR jacks are wired with pin 2 hot. The maximum gain at the headphone jack was 8.9dB; at the preamplifier output, there was a negligible insertion loss of 1dB.

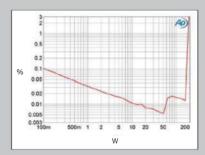
The balanced line-level input impedance was a uniform 42k ohms across the audioband, while the unbalanced input impedance was 10.9k ohms. The output impedance at the preamplifier jacks was an appropriate 200 ohms, while at the headphone jack it was 22 ohms—a little on the high side. The output impedance at the speaker terminals was less than 0.1 ohm, including 6' of speaker cable. As a result, the modulation of the amplifier's frequency

0.5 0.5 0.02 0.01 0.05 0.02 0.01 0.005 0.003 0.003 0.003 0.003 0.003 0.004 0.005 0.0

**Fig.4** Creek Evolution 100A, distortion (%) vs 1kHz continuous output power into 8 ohms.

response with our standard simulated loudspeaker was minimal (fig.1, gray trace). Commendably, there was no change in small-signal bandwidth with changes in load impedance or volumecontrol setting, and the 100A's -3dB point is a high 200kHz, correlating with the amplifier's superb reproduction of a 10kHz squarewave (fig.2). However, when I tried measuring the response at the headphone jack with the volume control at its maximum and 1V output, and with the speaker outputs disabled, the amplifier turned off at 60kHz and displayed the message "Overcurrent." Turning down the volume restored operation, but the Creek's protection circuitry appears to operate independently of the actual state of the output devices.

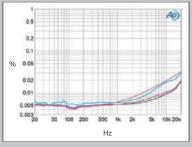
Channel separation was good, at >80dB below 2kHz. The wideband,



**Fig.5** Creek Evolution 100A, distortion (%) vs 1kHz continuous output power into 4 ohms.

unweighted signal/noise ratio, measured at the speaker terminals with the single-ended inputs shorted to ground but the volume control at its maximum, was an okay 71dB ref. 2.83V, this improving to 81dB when A-weighted. Spectral analysis of the Creek's output while it drove 1kHz at 1W into 8 ohms (fig.3) indicated that the highest-level spuriae were the even-order harmonics of the 60Hz AC frequency.

With both channels driven, the Evolution 100A met its specified power output at 1% THD+noise, delivering 113Wpc into 8 ohms (20.5dBW, fig.4) and 180Wpc into 4 ohms (19.5dBW, fig.5). The downward slope of the traces below a few tens of watts in figs. 4 and 5 suggests that actual distortion lies below the noise floor. However, note the kink in these traces at 33W into 8 ohms and at 50W into 4 ohms.



**Fig.6** Creek Evolution 100A, THD+N (%) vs frequency at 12.75V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta).

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of the twentysomething women exclaimed, "Ooooo! The Beatles! They're sooo revolutionary!"

Through the new (made in Oxfordshire, UK) Falcon LS3/5A speakers, I was playing, fairly loudly, "Back in the U.S.S.R.," from the mono vinyl reissue of *The Beatles*. The woman with tattooed legs was singing along with "Those Ukraine girls really knock me out . . ." The girl with the suspenders raised her voice: "Did you buy this record when it first came out?"

Embarrassed to admit my age, I said, "Yes-but this is a reissue."

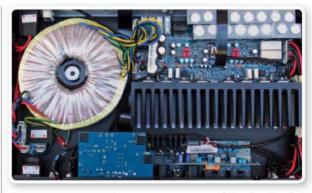
Her boyfriend grinned widely. "This sounds amazing! I'm gonna buy the whole set."

I asked if he had a turntable.

"Yup," he said proudly. "My dad gave me his old Linn Sondek." He inquired about the Creek 100A and I explained about British audio vs American audio, and how in the US we tend to value big bass, microscopic detail, heavy boxes, and useless meters, while the more working-class audiophiles in the UK prefer simpler, more practical systems that showcase pace and musicality. I told him about Mike Creek starting out in a shed behind his house in 1982, and the belief of Linn's founder, Ivor Tiefenbrun, that the turntable is the heart of the system. We played a lot of Sergeant Lucy's Octopus that night, and the Creek, Falcons, and Beatles did their homeland very proud. (Fondly reminiscing, I wished I'd never sold my LP12.)

### **Coaxial digital**

The next day, I used my UK-made Puresound A-8000 CD



Power is supplied by a massive toroidal transformer.

player as a transport to drive the Creek 100A's Ruby DAC. I played my newest love, Rachel Unthank & the Winterset's The Bairns (CD, Real World USCDR

W158). Every song on this album owns me, but lately, I'm most taken by their cover of "Sea Song," by Soft Machine and Matching Mole genius Robert Wyatt. The 100A reproduced Becky Unthank's voice in full-on hi-fi-del-i-tie, with detailed bass, a rich midrange (it actually could have been a little richer), and clean, open, extended highs. The acoustic of the recording venue was rendered in such a realistically scaled way that I could feel the wooden floor and sense the microphones. The sound of the piano via the little Falcons was surprisingly full-bodied. But what the Creek 100A and Falcon LS3/5As really did was show me just how animistic, musically innovative, and touchingly human Wyatt and the

### measurements, continued

These, presumably, are the voltage levels—respectively, 16.25V into 8 ohms and 14.15V into 4 ohms—at which the output stage's higher-voltage devices turn on. But the distortion at high power below clipping remains very low in absolute terms.

Fig.6 plots the percentage of THD+N against frequency at 12.65V, equivalent to 20W into 8 ohms and 40W into 4 ohms. The THD lies under the noise floor below 1kHz, and though it rises at higher frequencies, it is still low. Fig.7 shows the 100A's THD+N residual waveform at 10W into 8 ohms;

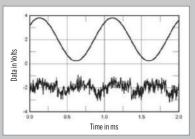


Fig.7 Creek Evolution 100A, 1kHz waveform at 10W into 8 ohms, 0.006% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

though there is a suggestion of secondharmonic distortion, the waveform is primarily noise, even after averaging 32 captures. By contrast, the Evolution 50A's output stage appeared to be underbiased, with some crossover artifacts present in its residual waveform.

Repeating the residual waveform capture at 40W into 8 ohms with the 100A's higher-voltage output devices turned on gave the waveform shown in fig.8. The pairs of spikes bracketing each waveform peak are due to the higher-voltage devices switching on and off each cycle. However, the distor-

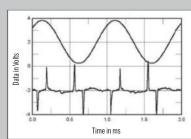
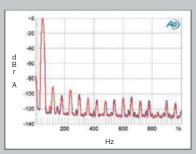


Fig.8 Creek Evolution 100A, 1kHz waveform at 40W into 8 ohms, 0.009% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

tion level is still very low, at 0.009% vs 0.006%, so this behavior looks worse than it actually is. This was confirmed by spectral analysis of the Creek's output while it drove 50Hz at a level below the switching voltage (fig.9) and above it (fig.10). At 20Wpc into 8 ohms, the highest-level harmonic is the second at just -116dB, well below the level of the power-supply spuriae, while at 80Wpc into 8 ohms, though odd-order harmonics can now be seen, these still lie at a low level. Intermodulation distortion (fig.11) was also very low.

The Evolution 100A's Sequel Mk.2



**Fig.9** Creek Evolution 100A, spectrum of 50Hz sinewave, DC-1kHz, at 20W into 8 ohms (linear frequency scale).

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Unthanks really are. The bitter beauty of Wyatt's lyrics—"I like you mostly late at night, you're quite alright/But I can't understand the different you in the morning"—was fully conveyed.

I played *The Bairns* again, this time with the 100A driving the new Morel Octave 6 speakers (review in the works), and all I can say is, Wow and dang! Playback went from Brit-folk ecstatic to pure pagan magicke. Becky and Rachael Unthank became Moon Goddesses dancing in white linen. Niopha Keegan's fiddle became disarmingly textured, and suddenly Belinda O'Hooley's piano was as big, solid, and richly conveyed as I could ever require. Instrumental tones and vocal colors were fleshed out completely. Earlier, the 100A had made the LS3/5As "disappear" while generating an enormous soundstage. Now it was the Creek making the Morels produce color and corporality by the shovelful. I stayed up late that night, playing record after record.

Creek's US distributor, Roy Hall, of Music Hall, quoted someone he knew: "Unlike analog, digital is never charming." This may be true, but for now, forget about charming—the Evolution 100A's Ruby DAC module (\$500) allowed Becky Unthank's voice to convey the Beowulf-like bleakness of the Anglo-Saxon landscape. What more could I want? To my taste and somewhat limited experience, the Creek's DAC is the best I've found in an integrated amp.

Oops! I forgot—I don't believe in "best." I'll say just this: I liked the optional Ruby DAC enough that, every time I played a CD or a high-resolution file, I stopped and thought, "Damn. That is a good DAC!"



The Sequel Mk.2 phonoboard uses classic op-amp chips.

#### Sequel Mk.2 phono-stage module

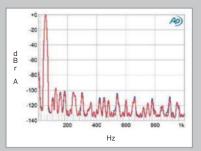
Returning to America and the Evolution 100A's Sequel Mk.2 phono stage: I played a newly acquired copy

of Pharaoh Sanders's *Black Unity* (LP, Impulse! AS-9219), and Billie Holiday's *The First Verve Sessions* (2 LPs, Verve VE-2-2503). For this listening session I used Magnepan's new .7 speakers (review to come), and the 100A drove them with apparent authority. With both records, the Creek showcased beautiful tone and a big soundstage. Lady Day's poetic charm was in my room. Detail was moderate but gently sufficient. But with every disc, there was an inescapable lack of openness and boogie. Was this the phono stage? Or was it the Creek struggling with the .7s' quasi-ribbon drivers?

Thinking that these deficiencies must be connected to driving the current-hungry Magnepans, I returned to the Falcons and played one of BBC DJ John Peel's favorites: from Fairport Convention's *Liege & Lief* (LP, A&M SP 4257), an arrangement of "Reynardine," a traditional Celtic ballad about a captivating Irish faery who could turn into a

#### measurements, continued

phono module is based on vintage dual op-amp chips: one TL072 and two NE5532s. But measured at the preamp outputs, its performance was exemplary. The voltage gain was 40.1dB, and the Sequel's input impedance was 46k ohms at 20Hz and 1kHz, 42k ohms at 20kHz—all perfect for moving-magnet cartridges. The unweighted, wideband S/N ratio, ref. 1kHz at 5mV, was a good 61dB, this improving to 70.5dB when A-weighted. The phono module was non-inverting, and its RIAA equalization was superb (fig.12), with respect to both its accuracy and the match

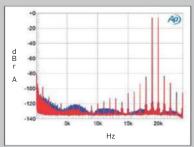


**Fig.10** Creek Evolution 100A, spectrum of 50Hz sinewave, DC-1kHz, at 80W into 8 ohms (linear frequency scale).

between channels.

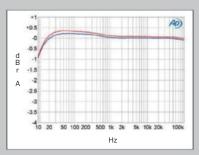
The phono module also had superb overload margins, at close to 20dB across the audioband, and harmonic distortion was very low—with a 1kHz tone at 5mV, the highest-level harmonic was the third, at just -87dB. Intermodulation distortion (fig.13) was also very low.

Measuring the performance of Creek's Ruby digital-input module with the 100A's volume control set to its maximum, 1kHz data at -12dBFS gave rise to 754.3mV at the preamp outputs but a clipped output at the speaker



**Fig.11** Creek Evolution 100A, HF intermodulation spectrum, DC-24kHz, 19+20kHz at 40W peak into 8 ohms (linear frequency scale).

terminals. Reducing the digital level to -20dBFS gave an output power of 14.2W, meaning that digital inputs should not be used with the volume control set above "-9dB" if the output stage is not to be driven into overload. Even so, I ran into the same problem mentioned earlier: With 192kHz-sampled data above 50kHz, the amplifier turned itself off even though the speaker outputs were inactive. This time, the output remained muted after I'd lowered the volume, and even after I'd turned the 100A off and on again. After some reflection, I used the



**Fig.12** Creek Evolution 100A, phono input, response with RIAA correction (left channel blue, right red) (0.5dB/vertical div.).

PHOTO: JOHN ATKINSON



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werefox and steal your girlfriend. Guess what? The Innovation 100A loved this British folk-rock group as much as I do—and it loved the 15-ohm, LS3/5As much more than the Maggies! Can an amp be xenophobic? With the Falcons, large amounts of openness and raw drive reappeared—enough that I could forget about critical listening and simply revel in Dave Swarbrick's guitar reverb and Sandy Denny's otherworldly voice.

As a test for xenophobia, I experimented with another of my old favorites, Falla's *El Retablo de Maese Pedro*, with Ernest Ansermet conducting the Suisse Romande Orchestra (LP, London STS 15014). The Sequel 2 played this, the National Orchestra of Spain, and dozens of other non-Anglo LPs, with amazing tone and vigor. The Falcons allowed me to more fully scrutinize the Sequel Mk.2 phono stage—it was good, but not up to the standard of the Ruby DAC.

So: If you're a serious aficionado of black discs, I suggest you skip the 100A's \$200 Sequel Mk.2 phono option and save for the British-made, LFD Phono LE¹ (\$1200)—or go totally wild and spring for Creek's extraordinary, two-box Wyndsor phono stage (\$2495).

#### **Headphones**

Mike Creek says that the Evolution 100A's headphone output "is fed from a dedicated high-output current circuit, situated on the pre-amp circuit board. Creek does not stepdown the power amp output, as that results in a substantially higher output impedance. In fact, we still insert a low value resistor in series with the output, to prevent accidental damage. This sets the [headphone] output impedance at <50 ohms, which is good for driving low impedance

headphones correctly."

As you must know by now, I am falling quickly and deeply down the rabbit hole of headphones, and doing more and more of my primary in-house listening via these musicprobing devices. Listening through high-quality headphones is like looking at music through a magnifying glass—more is always revealed. Continuing my quest under the Union Jack, I began my audition of the Creek Evolution 100A's headphone output with a pair of Bowers & Wilkins P5s. And yes: right away, I could make out more of the words Sandy Denny sings on *Liege & Lief*—which made me love her even more. The bass in *The Bairns* was enjoyably solid. Through the B&Ws, the 100A's headphone amp sounded open, very detailed, and grain free. In fact, it was the best these headphones have ever sounded. My Sony Pro 7520 headphones fared less well—these usually excellent studiotype 'phones sounded comparatively closed in and dynamically constrained. Then, like Goldilocks sampling bear beds and porridge, I plugged in my Audio-Technica MH50x headphones. The paradigm shifted. Spring arrived. And tomorrow, the baseball season would begin.

I put on Sasha Matson's Cooperstown: Jazz Opera in Nine Innings (2 CDs, Albany TROY1553/54). I needed to play it—what is more unBritish than baseball? With this beautifully recorded operetta, the MH50x 'phones played like Goldie's perfect porridge: just right! The 100A's dedicated "low impedance source" struck down xenophobia and drove these sealed 'phones with greater degrees of naturalness, de-

- 1 See www.stereophile.com/content/lfd-phonostage-le-phono-preamplifier.
- 2 See www.stereophile.com/content/recording-april-2015-matson-cooperstown.

#### measurements, continued

remote control to turn off both sets of speakers; selecting Speakers A then brought the Creek back to life.

The TosLink inputs locked to all sample rates up through 192kHz, though the USB input was limited to 96kHz and below. Apple's USB Prober utility identified the 100A as "Evolution USB\000\000\000\000\000" from "Creek Audio," and revealed that the USB input operated in the isochronous adaptive mode. The Creek's impulse

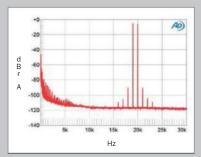
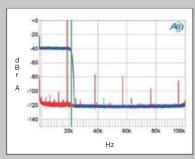


Fig.13 Creek Evolution 100A, phono input, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 500mV peak into 100k ohms (linear frequency scale).

response with 44.1kHz data (not shown) indicated that the digital reconstruction filter was a conventional time-symmetrical type, and 44.1kHz-sampled white noise at -4dBFS (fig.14, blue and cyan traces) rolled off rapidly above the Nyquist frequency (green vertical line). As a result, the image of a full-scale, 19.1kHz tone at 25kHz (44,100-19,100=25,000) was suppressed by 110dB (fig.12, red and magenta traces). The harmonics of



**Fig.14** Creek Evolution 100A, digital input, wideband spectrum of white noise at -4dBFS (left channel blue, right cyan) and 19.1kHz tone at OdBFS (left red, right magenta), with data sampled at 44.1kHz (20dB/vertical div.).

the 19.1kHz all lie at or below -80dB (0.01%).

Fig.15 shows the Ruby module's frequency response with 44.1, 96, and 192kHz data. The audioband response is the same at all three sample rates. Though there is, as expected, a sharp rolloff above 20kHz with 44.1kHz data, the ultrasonic response with the two higher sample rates was not as extended as I had expected. With 192kHz data, the output was -3dB at 42kHz

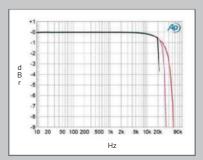


Fig.15 Creek Evolution 100A, digital input, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (1dB/vertical div.).





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tail, and transparent musical charm than any non-standalone headphone amp I've used.

#### **Conclusions**

While the Creek Evolution 100A didn't elevate my perceptions of the music to magicke level with every pair of speakers or headphones I tried, it always did everything that I need an integrated amp to do. It consistently reproduced the recordings I love in a straightforward, exciting, satisfying way that made their invention and humanity easily accessible. In fact, the 100A's greatest virtue was how consistently and vigorously it exposed the intentions of the artists behind the music. Like my venerable Creek 4330, the new Evolution 100A should enable any unpretentious audiophile to dance and sing and insightfully enjoy the musical arts for years—and decades—to come.

#### **A Humble Postscript**

I've been around some big, exotic, extremely expensive audio blocks. But at this point in my life, my audio beliefs and taste direct me toward simple, less expensive systems centered around my computer, a solid turntable, a quality integrated amp (like Creek's Evolution 100A), and small, classic speakers such as the Falcon LS3/5As mentioned above. I feel that anything larger or wilder would get in the way of my primary pleasure: studying and collecting recordings of music.

How do you feel? What do you believe? ■

#### ASSOCIATED EQUIPMENT

Analog Sources Acoustic Signature WOW XL, Pioneer PLX-1000, Thorens TD-124, VPI Traveler turntables; Abis SA 1.2, Acoustic Signature TA-1000 tonearms; Grado ME & Mono, Ortofon CG 25 DI II & 2M Black, Shure SC35C, Soundsmith Carmen, Zu Audio DL-103 cartridges.

Digital Sources Puresound A-8000 CD player; Halide HD, Line Magnetic LM 502 CA DACs; Mac mini computer.

Phono preamplification April Sound GB-1, Blue Horizon Prophono, LFD LE, Schiit Mani, Soundsmith MMP3.

Integrated Amplifiers Hegel Music Systems H160, Line Magnetic LM518 IA, Simaudio Moon Neo 340i, Vinni Rossi LIO.

**Headphone Amplifier** Schiit Asgard. **Loudspeakers** DeVore Fidelity Orangutan O/93, Falcon LS3/5A, Magnepan .7, Morel Octave 6.

**Headphones** Audio-Technica ATH-M50x, Bowers & Wilkins P5, Sony Pro 7520.

Cables Interconnect: AudioQuest Big Sur & Cinnamon & Golden Gate, Auditorium 23, Kimber Kable Silver Streak. Speaker: AudioQuest Type 4, Auditorium 23, Kimber Kable 8TC. AC: manufacturers' own.

Accessories Sound Anchor stands, Dr. Feickert Analogue alignment tools, Hunt EDA record brush.—Herb Reichert

#### measurements, continued

rather than at the anticipated 90kHz or so. Perhaps the DAC's digital filter at the higher sample rates is optimized for time-domain performance?

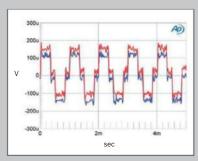
I test a DAC's resolution by feeding it first dithered 16-bit data representing a 1kHz tone at -90dBFS, then 24-bit dithered data representing the same signal. The results for the 100A are shown in fig.16. The drop in the noise floor with the increase in bit depth is around 16dB, suggesting resolution close to 19 bits, which is good. However, the low-level power-supply spuriae seen in earlier graphs are also evident here. Repeating this test with USB data

Fig.16 Creek Evolution 100A, digital input, spectrum with noise and spuriae of dithered 1kHz tone at -90dBFS with: 16-bit data (left channel cyan, right magenta), 24-bit data (left blue, right red) (20dB/vertical div.).

Hz

gave the same result, confirming that the 100A's USB input correctly handles 24-bit data. With undithered 16-bit data at exactly -90.31dBFS, the result was three clearly defined DC voltage levels and a symmetrical waveform (fig.17), while with 24-bit undithered data the result was a good sinewave (not shown).

Finally, tested for rejection of jitter the TosLink and USB inputs behaved identically, with the odd-order harmonics of an LSB-level, 16-bit, low-frequency squarewave mostly at the correct level (fig.18, green line), and no jitter-related sidebands visible. How-



**Fig.17** Creek Evolution 100A, digital input, waveform of undithered 1kHz sinewave at -90.31dBFS, 16-bit data (left channel blue, right red).

ever, some very low-level power-supply spuriae are visible in this graph.

Assuming that the operational problems I encountered were specific to this well-traveled review sample, Creek's Evolution 100A integrated amplifier measured quite well. The dual-voltage-rail supply for the output stage works as advertised in increasing the output power compared with the Evolution 50A. I was particularly impressed by the \$200 moving-magnet module, so it is a puzzle why HR felt it to be the 100A's weak point.

#### —John Atkinson

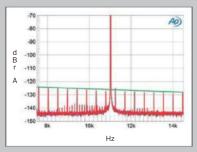


Fig.18 Creek Evolution 100A, digital input, highresolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit data from SYS2722 via TosLink (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.





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#### **ART DUDLEY**

### Pear Audio Blue Kid Howard & Cornet 2

#### **TURNTABLE & TONEARM**

here is nothing new under the sun, or so we are told. Nevertheless, in the early 1990s, a British designer named Tom Fletcher upset the audio status quo with a turntable that combined otherwise-familiar elements in a manner that was, at the very least, new with a lower-case *n*. Fletcher's product, the Space Deck, was perhaps the first original design in British phonography since the Roksan Xerxes of 1985; and his company, Nottingham Analogue, went from nothing to something in no time at all.

Key to the Space Deck's performance was the pairing of

two seemingly incompatible components: a tiny, low-torque motor and a massive metal platter, the latter damped with rubber rings stretched around its perimeter. In declaring that such a thing can't possibly work, the casual observer is to be forgiven, at least to the extent that *work* means "get the platter turning." The Nottingham Analogue

By keeping motor size to the absolute minimum, the late Tom Fletcher minimized vibrations at their source.

Space Deck did no such thing. Instead, users were politely asked to do it themselves by giving the platter a bit of a spin with their hands; once set in motion, the platter was kept spinning steadily, at the correct speed, by its small but perfectly formed motor, and by the flywheel effect enabled by the heavy platter's moment of inertia.

The reason for all that unusualness was Fletcher's belief that motor vibrations are a major obstacle, if not *the* major obstacle, to a high quality of playback of LPs. By keeping motor size to the absolute minimum, he minimized vibrations at their source.



#### SPECIFICATIONS

Description Two-speed, belt-drive turntable with unipivot tonearm. Motor: AC synchronous. Speeds: 33 ½ & 45rpm. Tonearm: length, 10"; spindle to pivot, 222mm; effective length, 239mm; effective mass, 12.50gm.

Dimensions 19.75" (505mm) W by 6" (155mm) H by 14" (360mm) D. Weight: Not noted.

reviewed 10003 US.

Price \$4995, turntable and tonearm when purchased to-

gether; Kid Howard turntable alone costs \$2995, Cornet 2 tonearm alone costs \$2295. Approximate number of dealers: 7.

#### Manufacturer

Pear Audio Analogue, Cankarjevo Nabrežje 15, 1000 Ljubljana, Slovenia. Web: www.pearaudioanalogue.com. US distributor: Audio Skies, 4602 Greenwood Place, Los Angeles, CA 90027. Tel: (310) 975-7099. Web: www.audioskies.com. **ASCENT** SERIES

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The Space Deck sold well, and was joined in the Nottingham line by a number of other models—some cheaper, some more expensive—all based on the same ideas. And although in 2011 the company's success was dimmed by its founder's untimely death, Notts Analogue fans take comfort in knowing that today no fewer than four firms make phonographs designed for them by Tom Fletcher: Analogue Works, Fletcher Audio, Nottingham Analogue, and Pear Audio Analogue.¹

The last of those, unrelated to the makers of Pear Cables, is an offshoot of a European distribution company whose principal, Peter Mezek, has considerable experience with various high-end turntable brands. In fact, Mezek was the distributor for Well Tempered turntables and tonearms, until an interruption in the availability of that line led him to seek help from Tom Fletcher, who responded with the offer of a new record-player design. Production began in Nottinghamshire, UK—in the very heart of Sherwood Forest, we're told—but manufacturing has since moved to a factory in Ljubljana, Slovenia. The next-to-cheapest model in a line of four turntables, the Kid Howard is often bundled with Pear Audio's Cornet 2 tonearm, the combination selling for \$4995. (When the two are purchased separately, the total cost is \$295 higher.)

Before diving in, a word about names: Pear Audio Analogue is the name of the company that manufactures these products, while Pear Audio Blue—the last word a reference to Mezek's dog, of whom Fletcher was especially fond—is the name of their product *line*. Because overly complex names result in clumsy sentences and reviews that read like press releases, I've taken the liberty of streamlining.

#### **Description**

Pear Audio's Kid Howard turntable is built on a single-layer, 1.75"-thick solid plinth of relatively low-mass wood whose weight and grain suggest poplar or perhaps very lightweight ash. (Pear's Peter Mezek declined to identify the wood used.) To make room for the outboard motor pod, a U-shaped chunk of wood about 5" wide by 5" deep is cut away from the left side of the plinth. The pod comprises inner and outer cylinders, both machined from an acetal plastic; the motor itself is rigidly fixed to the inner cylinder, whose height can be adjusted by means of its friction fit within the outer cylinder. The motor is topped with a stepped plastic pulley that drives the platter by means of a

soft-rubber circumferential belt similar in cross-section to bucatini.

The Kid Howard's 17-lb aluminum-alloy platter is fitted with a stainless-steel bearing spindle 0.4" in diameter. The business end of the spindle is neither flat nor conical, but machined to a shape, best described as a nub, whose flat contact area measures a mere 0.085" across. In use, this nub bears down against a convex thrust pad machined into the bottom of the brass bearing well, the latter containing a bath of light oil. Given the Kid Howard's apparent dependence on angular momentum, for speed stability, I was surprised that its platter's mass is not concentrated near its circumference, as in many other platters. Instead, the platter's thickness is uniform over most of its area.

Bolted rigidly in place in the right-rear corner of the plinth is a round, acetal armboard 4" in diameter. In addition to that and the motor and the bearing, the Kid Howard's plinth incorporates a fourth element: Under the platter, to the right of the main bearing, a round hole 1.75" in diameter has been drilled straight through the plinth. The bottom of the hole is occluded by a thin acetal plate, through which passes a length of soft but stiff rubber pipe, the top end of which is allowed to brush lightly against the underside of the spinning platter. I wondered if this resistive element in the drive system was intended to increase effective torque at the disc-stylus interface—like other aspects of the Kid Howard's design, the pipe is not mentioned in the owner's manual. Mezek corrected my misimpression, describing this "tail" as "a mechanical speed enhancer" whose slight resistance increases the rotational stability.

Pear Audio's Cornet 2 tonearm is a unipivot design with a spindle-to-pivot length of 222mm; combined with an overhang of 12mm or so, that would make its effective length approximately 234mm, or 9.2". The unipivot is "captured" in the sense that the top portion of the bearing can't be completely removed from its base, but there seemed to be considerable play in the bearing: the top was free to be moved, from side to side and fore and aft. (The top can also be lifted straight up, but to a much smaller degree.) The Cornet 2's headshell area, which lacks a fingerlift, is machined from aluminum alloy; the armtube is made of carbon fiber, and the counterweight is brass. Otherwise,

<sup>1</sup> In this sense, the late Tom Fletcher is exceeded only by the BBC itself, whose LS3/5a loudspeaker design has been licensed to as many as 11 different companies.

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with a few very minor exceptions, the rest of the tonearm is machined from acetal. Skating compensation is of the (uncalibrated) falling-weight type, using not a thread but a very lightweight metal lever, bent into a shape similar to the "longhorn" hand gesture popular among heavy-metal musicians and some US Presidents. The tonearm's height is adjustable, either manually or by means of a vertical setscrew that raises or lowers the arm's acetal gantry relative to the armboard.

Fit and finish on my sample were mostly quite good. The tallish platter, though not perfectly free from runout error, was nonetheless better than average in that regard, and its outer edge was nicely polished; the plastic motor pulley, too, was free from apparent defect. The unipivot bearing of the Cornet 2 tonearm, being wobbly when handled—but presumably not during actual record play-confounded my efforts at measuring friction. Of those visitors to my home who commented on the Pear Audio's appearance, almost all were impressed, many commenting on the attractiveness of its matte-finish wooden plinth.

#### Installation and setup

From carton to console, setup time was minimal for the Pear Audio Kid Howard. I was required only to: level the plinth by adjusting its three large, multi-padded feet; apply to the bearing well a small amount of oil; lower into place the bearing spindle and platter; position the motor pod within its cutout; adjust the motor's height; install the drive belt; and attend to all of the usual chores of cartridge installation and adjustment.

As for the latter: As in most tonearms, the Cornet 2's headshell is slotted to permit the setting of overhang; the range of adjustment proved sufficient to attain correct Baerwald alignment, measured with a DB Systems protractor,2 with all three of the pickups I tried: the Denon 103, the Miyabi 47, and the Miyajima Premium BE Mono II. Initially, I used the headshell's angled front edge as a guide in establishing offset, but that angle proved insufficient with all three pickups, necessitating a slight extra measure of clockwise rotation, as viewed from above.

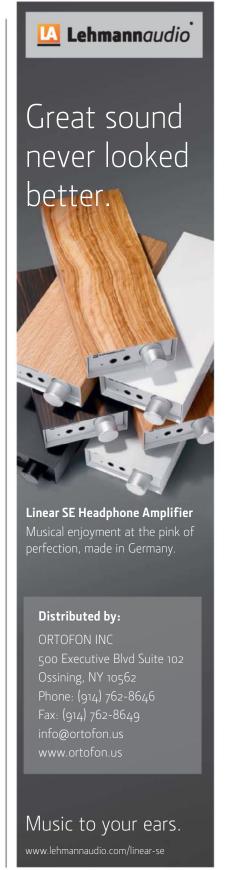
The fanfare accorded technological breakthroughs may be withheld from the Cornet 2's uncalibrated downforce mechanism, which is set by adjusting

the position of a brass counterweight relative to the arm's fulcrum, within the weight's acetal carrier: a friction fit in the manner of the above-mentioned motor mount. Once I got the hang of how much thumb pressure equaled how much travel fore or aft, this was quite easy. Less than easy was adjusting the height of the Cornet 2: Because the tonearm mount is of such large diameter, and because it's made without an upper collet of any sort, the grub screw that secures the arm pillar is snugged into the far end of a recess unusually deep, even given the oblique angle at which the recess was machined. Because that screw is nonetheless guite short, and because it's made of nylon rather than metal, it was the very dickens to turn. Proponents of making fasteners "Linn-tight," an inclination on which I'll withhold judgment, will be confounded.

Used with the Denon DL103 cartridge, the Cornet 2 tonearm exhibited lateral and vertical resonant frequencies of 15 and 14Hz, respectively, observed with the aid of Hi-Fi News & Record Review's colorfully titled Test Record (LP, Hi-Fi News HFN 001). Neither mode was terribly pronounced, and those numbers are acceptably low, if only just: I couldn't help concluding that the Denon might be just a shade too low in compliance for the moderatemass Cornet 2. A slightly better match was seen with the Miyabi 47, whose numbers were 13Hz lateral and 10-12Hz vertical, the latter anomaly perhaps explained by the maturity of the Miyabi's suspension. I didn't test the Miyajima, even with just the Test Record's lateral band, out of concern that the cartridge's lack of vertical compliance might result in damage to the groove.

Observed with the aid of the 3150Hz tone on Dr. Feickert Analogue's 7" test record and ProgTec's PlatterSpeed software for the Apple iPhone, the Kid Howard's actual speed ranged between 34.14 and 34.25rpm. Wow, in accordance with DIN IEC 386, was ±0.1% using the 2-Sigma method, and ±0.09% with dynamic

2 The Pear Audio player comes with a paper protractor labeled "Polaris Plus Stylus Alignment Gauge." Like Mobile Fidelity Sound Lab's unlamented Geodisc, it's the sort that requires the user to aim a sight line directly at the tonearm's precise pivot: never a recipe for accuracy, in my experience. The Polaris's results did not agree with those of my DB protractor, in which I have the greater faith, although the Polaris did agree that the cartridge offset angle should be greater than that suggested by the headshell's angled edge.





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weighting. But the next day, using the same measurement regimen, I found a mean frequency of 3229.9Hz and ±0.11% wow using 2-Sigma, and a more considerable ±0.19% wow using dynamic weighting. None of those numbers was cause for extreme concern, although levels of wow above 0.2% would be.

That said: Beginning just a few days into the test period, there were three times when I started the platter spinning in the prescribed manner, dropped needle into groove, and noted at once that the speed was distinctly too slow. On each of those occasions I then lifted the tonearm, placed the 7" test record gently atop the 33 \(^1\)<sub>3</sub> rpm record I was attempting to hear, and measured a rotational speed of about 26rpm—which, in musical terms, produces notes that sound a full fourth below the intended pitch. The effect was to make Vaughan Williams's The Lark Ascending sound like a romance for orchestra and viola, not violin. There was also one afternoon when the act of changing records without stopping the platter produced an identical slowdown, which suggests that there is more than one speed at which the motor is eager to turn. Thus did I learn to take a stronger hand to startup—while taking care to make contact with only the uppermost of the platter's damping rings, so as to avoid contaminating the rubber drive belt—and to always stop the platter completely before changing records. With that regimen in place, I was never again troubled with platter slowness.

#### Listening

This may not be the sort of praise for which Pear Audio longs, but the Kid Howard–Cornet 2 combination

# All kinds of strings sounded beautifully lush through the Pear Audio combo.

sounded surprisingly good. By which I mean: Given the turntable's decidedly torqueless motor, and the Stutz Bearcat technique required to get its platter spinning, I didn't expect a great deal of touch and force and tactile nuance. Indeed, the Pear Audio didn't provide those qualities in the same measure as do such conspicuously torquey 'tables as the Garrard 301—but provide them it did, often to a satisfying degree. And with them came other qualities that ranged in strength from impressive to striking.

Striking is a fitting description of the player's powers of scale: The Kid Howard and Cornet 2 created a soundfield that was engagingly, involvingly big. And the parts of that soundfield that weren't music were impressively "black": lots of big, black nothingness surrounding very colorful music. Very, as in very.

The Pear Audio did better-thanaverage jobs with musical timing, momentum, and flow, even if its overall sense of drive wasn't the best. From Scottish Country Dances, by Jimmy Shand and his band (10" mono LP, Parlophone PMD 1029), "Foursome Reel"a Scottish cousin of the bluegrass fiddle tune "Devil's Dream"-was energetically involving: The music's upbeats, emphasized by piano and a slightly anachronistic-sounding modern drum kit, came across with fine snap and drive. And in "Alabamy Bound," from Ray Charles's The Genius Hits the Road (LP, ABC-Paramount ABC-335), the

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#### ASSOCIATED EQUIPMENT

Analog Sources Garrard 301 turntable; EMT 997 tonearm; EMT OFD 15 & TSD 15 pickup heads; Denon DL-103, Miyabi 47, Miyajima Premium BE Mono II cartridges.

Digital Sources Halide Designs DAC HD USB D/A converter; Apple iMac G5 computer running Audirvana Plus 1.5.12; Sony SCD-777ES

SACD/CD player.

Preamplification

Hommage T2 step-up transformer, Shindo

Masseto preamplifier.

Power Amplifiers Shindo Corton-Charlemagne (monoblocks), Shino Haut-Brion.

Loudspeakers Altec Valencia, DeVore Fidelity Orangutan

0/96.

Cables USB: WireWorld Revelation 2.0. Interconnect: Audio Note AN-Vx, Nordost Blue Heaven, Shindo Silver. Speaker: Auditorium 23, Nordost Blue Heaven.

Accessories Box Furniture Company D3S rack (source & amplification components), Audiodesksysteme Gläss Vinyl Cleaner.—Art Dudley

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Clockwise from above: Cartridges required a bit more offset than the angle suggested by the Cornet 2's headshell; Kid Howard's distinctive bearing nub; with its anti-skating lever in place, the Pear player seems ready to party hearty.

double bass and bongos (yes, bongos!) were well timed, with decent tactile qualities. The Kid Howard and Cornet 2 were good at communicating more nuanced timing, as well: The combination could swing—as it did during Mal Waldron's 5/4 "Warp and Woof," from *The Quest* (LP, New Jazz NJ-8269/Original Jazz Classics OJC-082). Better still was how the Pear pulled tons of tone from that groove: Booker Ervin's tenor sax, during both his solo and his duet with Eric Dolphy (on alto), had terrific color and texture, as did Ron Carter's beautiful solo cello.

In fact, all kinds of strings sounded beautifully lush through the Pear Audio combo. Used to play the classic recording of Ralph Vaughan Williams's Fantasia on a Theme by Thomas Tallis, by Sir John Barbirolli and the Sinfonia of London (LP, EMI ASD 521), the Kid Howard was like a window opened on a great, rolling field of tone and texture. And the Pear's grand sense of scale suited that LP's convincingly spacious stereo sound, which itself suits the music's *sweep*. Appropriately, there was less sweep but more swoop in the player's way with the recording of Vaughan Williams's The Lark Ascending by Sir Adrian Boult and the New Philharmonia, with violinist Hugh Bean (LP, EMI ASD 2329): Transcribed by the Kid Howard, Bean's violin was



I wondered if this resistive element in the drive system was intended to increase effective torque at the disc-stylus interface.

liquid in its sound, perfectly intonated, and unignorably moving. And the strings in the recording by Colin Davis and the London Symphony Orchestra of Michael Tippett's Symphony 2 (LP, Argo ZRG 535)—put to a very different use than in the Vaughan Williams recordings—were forceful and present, with especially good touch and texture in the sounds of double basses.

Huge waves of tone were also heard in "Raga Rageshri," from Ravi Shankar's Improvisations (LP, World Pacific 1416), especially in the sitar phrases and tambura drone that open the piece. Just as notable, in the jazzier "Fire Night," from the same album, the tabla had a good if not great sense of touch, as did the note attacks in the phrases played on nylon-string guitar and double bass. The Kid Howard's good tactile qualities followed it to other types of music, as the player did a really fine job with the note attacks in the electric-bass line (is that a Fender Bass VI I hear in the right channel?) and the tightly composed drumming in "Young and Innocent Days," from the Kinks' Arthur (LP, Reprise 6366).

Vocal performances, too, were realistically full and well textured through the Pear combo, as with Sarah Vaughan's great mono recording of "Nice Work If You Can Get It," from Sarah Vaughan in Hi-Fi (LP, Columbia



### Can a \$49 insect make all your CD files sound better than Hi-Res?

Yes and no: Using the same equipment and a quality DAC, a 24/96 file (for example) will always sound better than a CD 16/44.1 file ... but, even a single JitterBug will often allow a CD file to be more musical and more emotionally stimulating than a Hi-Res file without the benefit of a JitterBug.

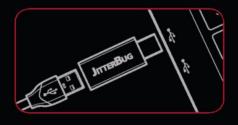
**Noise** is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

**Problem noise** is essentially random, resonant or parasitic energy, which has no meaning. It can't be turned into discrete sounds, but it does compromise signal integrity and the performance of everything it touches.

**JitterBug's dual-function** line-conditioning circuitry greatly reduces the noise and ringing that plague *both* the data and power lines of USB ports, whether on a computer, streamer, home stereo or car audio front-panel USB input.

A single JitterBug is used in between devices (i.e., in series) as shown below. For an additional "wow" experience, try a second JitterBug into another USB port on the same device (such as a computer). Whether the second port is vacant, or is feeding a printer or charging a phone, JitterBug's noise-reduction ability is likely to surprise you. No, the printer won't be affected—only the audio!

While a JitterBug helps MP3s sound a lot more like music, high-sample-rate files have the most noise vulnerability. Try a JitterBug or two on all your equipment, but never more than two per USB bus. There is such a thing as too much of a good thing.







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CL 745). Vaughan's voice was also reproduced with good presence and substance—descriptors that applied equally well to the sounds of Miles Davis's trumpet solo, and the sax-and-trumpet tag at the end of the song. And James Brown's "It's a Man's Man's Man's World," from the recent *Love Power Peace* (3 LPs, Polydor/Sundazed Music 5470)—a song that not only sounds best when played loud, but must be offered as a gift to one's neighbors—was simply incandescent.

One characteristic of the Pear Audio combination remains to be described: This player had excellent scale, very good tone and texture, very good momentum and timing, and fair touch and impact—but it also tended to roll off the extremes of the treble range to a slight but consistently audible degree. I could hear some timbral rounding-off of the French horn in the Sicilienne of Fauré's Pelléas et Mélisande, with Ernest Ansermet and the Suisse Romande Orchestra (LP, Decca/ Speakers Corner SXL 2303); in both the guitar and voice in the title song of Nick Drake's Pink Moon (LP, Island/ Universal 1745697); in all of the voices and instruments in "Whizz Kid," from Mott the Hoople's indispensable Mott (LP, CBS 69038)—really, just about everything I played on the Pear was ever-so-slightly unbright. The characteristic was pervasive, consistent, and not at all troubling, except in those rare instances of LPs that were already, themselves, too dull.

#### **Conclusions**

In use, considered apart from its sonic performance, there were many aspects of the Kid Howard-Cornet 2 that I liked, and only one or two that I didn't. As for the former, I actually came to enjoy the turntable's start-up procedure.

# This player had excellent scale, very good tone and texture.

Setting in motion a platter whose energy source is always at the ready—with its AC cord plugged in, the switchless motor produces a continuous, subtle, anticipatory vibration, until summoned into

action—reminded me of the unstruck bell in C.S. Lewis's *The Magician's Nephew*. (Unusual stories, like unusual audio components, have conventions of their own.) I also admired the turntable's appearance and general lack of fuss. In the latter column must go the *wobbledy-clunk* feel of the tonearm and the lack of a fingerlift on its headshell.

In a system that requires of its source components the last word in treble extension—or for a listener who's simply desirous of same—I don't think Pear Audio's Kid Howard—Cornet 2 combination would be ideal. Yet the obverse is no less true: For the listener whose system or tastes require a record player with the ability to sand off the edges before they reach a pair of overachieving tweeters, but without diminishing the musical and sonic details in the grooves, the Pear Audio combo may be just the thing.

In any event, the combination of Pear Audio Kid Howard turntable and Cornet 2 tonearm never failed to satisfy my cravings, even to excess, for good tone, texture, and scale. Which is to say that the Pear Audio never failed to sound analog, in some of the finest ways. For the user who desires a plug-and-play phonograph of appreciably better than entry-level quality, and whose system and tastes in sound are amenable to slightly soft trebles, the Pear pair is a very good choice.



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# ) W-UP BY ROBERT DEUTSCH & HERB REICHERT

THIS ISSUE: Further listens to a single-driver speaker from Eclipse and an LP player with Shure cartridge from Pioneer.

#### **FUJITSU TEN ECLIPSE TD712ZMK2 LOUDSPEAKER**

Of the speakers I've reviewed over the years, one stands out as being the most unusual, and I remember it with particular fondness: Fujitsu Ten's Eclipse TD712z. Looking like something that would be at home aboard the Starship *Enterprise*, this egg-shaped, single-driver speaker distinguished itself by its transparency, resolution, soundstaging, and lack of coloration. While no match for any number of comparably priced (or less expensive) multidriver speakers in bass extension and maximum attainable loudness, the strengths of the TD712z were such that I was sorely tempted to buy the review pair.

Since its release, in 2004, the TD712z has won a following among musicians and recording engineers, but its acceptance among audiophiles in North America has been

limited-perhaps because of spotty marketing. However, Eclipse has continued to refine the speaker. The TD712zMk.2 continues as the top model of the Eclipse line. Eclipse was recently picked up for North American distribution by On a Higher Note, headed by Philip O'Hanlon, whose other lines include Mola Mola, Luxman, and Vivid. I was happy to have a chance to acquaint myself with the successor to a speaker that had so impressed me.

WHAT'S NEW? I haven't seen the old and new models side by side, but going by pictures and memory, the TD712zMk.2 looks much the same as the TD712z (which I'll call the Mk.1). However, the enclosure is now bigger—the interior volume is 50% greater—and Fujitsu Ten describes a number of improvements in a white paper available on their website.<sup>2</sup> The fiberglass driver is still 4.7" (120mm)—apparently they tried larger drivers and didn't like the sonic tradeoffs-but with some refinements that, in combination with the larger cabinet, have resulted in improved bass extension: down to 35Hz, vs 40Hz. There's also a claimed improvement in the impulse response. The sound has also benefited from a more optimal distance between what Fujitsu calls the "grand anchor" behind the driver and the driver, and

use of a nonmagnetic spacer has resulted in a 10% increase in magnetic flux density.

The Mk.1's cone was made of a single layer of fiberglass; in the Mk.2, a second, cotton layer is added, to reduce unwanted resonances. The cone surround is corrugated, resulting in a better match of the cone's movements forward and back, and superior excursion linearity. Not discussed in the white paper but noted in the specifications is the extension of the TD712zMk.2's reproduction of high frequencies, from 20kHz to 26kHz, -10dB. That may not seem too impressive, but remember: it's accomplished by a driver of a size inherently better suited to covering the midrange and the bass, with no DSP or other signal manipulation to help extend the treble response. The frequency responses are: Mk.1: 40Hz-20kHz, -10dB. Mk.2: 35Hz-26kHz, -10dB.

Alas, the price has risen from \$7000 to \$10,600/pair.

SETUP AND SYSTEM: My renovated listening room is balance between the reflective and the reverberant, sounding neither overdamped nor too lively (if perhaps leaning slightly toward the latter). At 16' long by 14' wide by 7.5' a good match for the Eclipse TD712zMk.2s. I positioned the Eclipses to form an 8.21

now a space that strikes a good high, it's of a size that provided

The TD712zMk.2's reproduction of high frequencies is accomplished by a driver of a size inherently better suited to covering the midrange and the bass.



<sup>1</sup> The Fujitsu Ten Eclipse TD712z was reviewed in the January 2007 issue, Vol.30 No.1; see www.stereophile.com/content/ fujitsu-ten-eclipse-td712z-loudspeaker. Fujitsu Ten Limited, 2-28 Gosho-Dori 1-Chome, Hyogo-Ku, Kobe 652-8510, Japan. Web: www.eclipse-td.com. US distributor: On a Higher Note, PO Box 698, San Juan Capistrano, CA 92693. Tel: (949) 544-1990. Fax: (949) 612-0201. Web: http://onahighernote.com.

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<sup>2</sup> See www.fujitsu-ten.com/business/technicaljournal/pdf/33-2.pdf.

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equilateral triangle with my listening position, the speakers aimed directly at my ears. The Mk.1's backtilt could be adjusted with a hex wrench, but the Mk.2 requires no tools for this. I don't remember having any particular difficulty in aiming the Mk.1s, but doing this for the Mk.2 was exceptionally easy. The stand—included in the price—is an ingenious design that maintains the advantages of spiked mounting without damaging a hardwood floor.

The system was the same as in my review of the GoldenEar Triton One, in the February 2015 issue: PS Audio DirectStream DAC and PerfectWave Transport, Convergent Audio Technology SL-1 Renaissance preamp, McIntosh MC275LE amplifier, PS Audio P5 AC regenerator, and Nordost Valhalla 2 interconnects and speaker cables.

**SOUND:** Transparency, resolution, soundstaging—these were the characteristics of the TD712z that I praised in my 2007 review. Given that I did not have samples of that original version on hand for comparison, and that my system and the listening room's acoustic have changed since then, it would be foolish to ascribe any differences in sound exclusively to the speakers—that old, confounding problem.<sup>3</sup> Nonetheless, these are the same characteristics I heard in the Mk.2.

By transparency, I mean a quality of sound that allows us to hear what's on the record while adding a minimum of distortion and/or coloration. Listening through the TD712zMk.2s, I had the feeling that there was little between me and the players and singers, the speakers making their presence felt only through the music produced, and never sounding like "speakers." I've heard other speakers in my system that have approached this ideal, but none as closely as did the TD712zMk.2. It had the lowest level of "speaker sound" I've yet encountered—the original Quad is perhaps its only rival. Voices, male and female, came across with a very natural quality, limited only by sonic manipulation (EQ, reverb) added during recording and postproduction.

Minimizing distortion and coloration is one thing; resolution is a bit different. A speaker can sound natural, adding little sound of its own to the music being reproduced, but for most audiophiles this is not enough. We also want the speaker to resolve everything present on the recording, and not gloss over the fine details. If this means

The TD712zMk.2 excelled at resolution of subtle dynamic changes, at least when the overall sound level was not too high.

revealing things about the sound of the recording and associated components that perhaps are better left unheard, then so be it

The TD712zMk.2's high resolution of details combined synergistically with the PS Audio DirectStream DAC, particularly with the DirectStream having been updated with the latest operating system, Pikes Peak.<sup>4</sup> PS Audio claims that the DirectStream DAC is able to reveal on CDs "information that you didn't know was there." Indeed, I found this to be the case—but I couldn't have heard this finely detailed information unless the speakers themselves had been able to resolve it. The TD712zMk.2s were. This characteristic was particularly welcome when I played recordings of orchestral music from the early days of the Compact Disc, which formerly tended to sound like mush. Through the PSA DirectStream and the Fujitsu Eclipses the sound was much less mushy, much more like music, with better differentiation of instrumental textures. The TD712zMk.2 also excelled at resolution of subtle dynamic changes, at least when the overall sound level was not too high.

Eight years ago, in my review of the TD712z, I said that their "precision of imaging and soundstage definition were virtually in classes by themselves." Since then I've had more speakers in my listening room, and while the room itself has undergone some acoustical improvements and there have been changes in the system, that statement applies to the TD712zMk.2s as well. With the best recordings, the soundstage was wide and deep, with individual instruments and voices precisely positioned on it. Of speakers within my recent experience, the ones with the best soundstaging were the GoldenEar Triton Ones, but even they must take a back seat to the TD712zMk.2s. Multi-driver speakers such as the Triton One use crossovers and the spatial alignment of drivers to approximate the effect of sounds emanating from a single pointbut they're no match for single-driver speakers such as the TD712zMk.2, in which sounds actually *do* radiate from a single point.

Of course, single-driver speakers have their own limitations. The original TD712z couldn't play very loud and didn't go very low. The Eclipse design team's stated aim in developing the Mk.2 was to improve the original's power handling and extend its frequency response (especially in the bass), while maintaining or improving the accuracy of its impulse response. I take it from the TD712zMk.2's superb imaging and reproduction of transients that the speaker has at least maintained the exemplary time-domain performance of its predecessor. But what about power handling and the bass?

It's tricky to assess power handling without actually measuring: it comes down to playing music louder and louder until it seems subjectively "loud enough," while noting whether or not the music is beginning to sound distorted (or the speakers are going up in smoke).

To push the TD712zMk.2s to what is, for me, a listening level somewhat higher than normal but still appropriate for the music, I played "Baby Driver," from Simon and Garfunkel's Bridge Over Troubled Water (CD, Columbia 9914), set the volume as high as I was comfortable with, and hoped that wouldn't damage the Eclipses' drivers (it didn't-whew!). Studio Six's Digital SPL Meter App for the iPhone 6, set for C weighting, fast response, registered a peak of 92.6dB. Could I have gone louder? Maybe, but I didn't want to chance it. Many multidriver systems can play louder, and my Avantgarde Uno Nano hybrid speakers (horn plus dynamic subwoofer) would hardly break a sweat at this level.

Again, I didn't have the original TD712zes on hand to verify Eclipse's claim of having extended the low end from 40 to 35Hz. But just for the fun of it I took some informal measurements of the TD712zMk.2s, using the test signals on *Test CD 2* (Stereophile STPH004-2) and my SPL meter (C weighting, fast). Playing a 200Hz tone at a measured level of 77dB (which corresponds to a normal

<sup>3</sup> See www.stereophile.com/content/focal-aria-936-loudspeaker-confounding-cables-and-room-

<sup>4</sup> See my Follow-Up on PS Audio's Pikes Peak OS in the May 2015 issue: www.stereophile.com/content/ ps-audio-perfectwave-directstream-da-processorpikes-peak-upgrade.

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volume-control setting), the response was well maintained down to 40Hz, with elevations of 86 and 80dB at, respectively, 50 and 40Hz-which may represent help from room modes. Test CD 2 has no test tones between 40 and 31.5Hz, so I couldn't test Fujitsu's claim of 35Hz extension, but by 31.5Hz the response had dropped to 65dB. Considering the fact that the TD712zMk.2's claimed bass extension is 35Hz, -10dB, and the iPhone 6's built-in microphone rolls off at the bottom, this is in the ballpark. Of course, these measurements are not in the same class of standardization and repeatability as the ones made by John Atkinson, so I wouldn't claim too much for them, but they give you at least some idea of the speaker's lowend performance.

Subjectively, the bass didn't seem weak, and with some recordings—eg, Eiji Oue and the Minnesota Orchestra's of Copland's Fanfare for the Common Man (HDCD, Reference RR-93 HDCD)—it was surprisingly extended, and certainly much better

than one would expect from a pair of 4.7" drivers.

THE SPEAKER FOR YOU? In my 2007 review, I described the TD712z as "an extraordinary loudspeaker whose clarity, transparency, resolution, imaging, and timbral accuracy match or exceed those of just about every other speaker I've had in my system or heard at shows." In 2015, I can describe the TD712zMk.2 in the same words. As with the Mk.1, the Mk.2's limitations are in its maximum loudness level and its bass extension and power. However, Eclipse has made advances in both areas, and listeners who found that the MK1 fell *just* short of what they consider acceptable in these regards may find that the Mk.2 meets their criteria.

Having said that—and as much as I love these speakers—the TD712zMk.2 may not ultimately satisfy the audiophile who wants a speaker that can play *loud* and is capable of thunderous bass, especially in a large room. For them, Eclipse makes two subwoofers designed to match the TD712zMk.2:

the TD-720W (\$3600) and the TD-725W (\$6400). I've heard nothing but excellent reports about the Eclipse subs; if price is not a deterrent, and your main reservation about the TD712zMk.2 concerns the bass, they offer potential solutions. Although you could use a single sub, I'd want to use a pair of subs, and I'd want to make sure that they were set up very carefully. Also, the main speakers must be driven directly rather than through a highpass filter that rolls off the bottom end, which means that the sub is not going to help with power handling.

Still, if you don't require bass that you can feel as well as hear, I can tell you that in a modestly sized room, with no help from subwoofers, the TD712zMk.2s delivered sound that was . . . well . . . extraordinary. As I write this, I know that the review samples of the TD712zMk.2 have been purchased by the local Eclipse dealer, and that in a few days their staff will come by to pick them up. Maybe I could pretend not to be home . . .

-Robert Deutsch

#### **PIONEER PLX-1000 LP PLAYER**

Within minutes of submitting my review of Pioneer's PLX-1000 turntable for the March 2015 issue,<sup>5</sup> I had second thoughts: I'm new at this magazine. If the PLX-1000 doesn't play better than budget audiophile 'tables, as I said it did, in no time my credibility will be circling the porcelain bowl.

Hoping to avoid shame and insolvency, I began to relisten, rethink, and reevaluate. I played a lot more records, using as many different cartridges and phono stages as I could. I carefully compared the Pioneer to my current in-house references for quality phono playback: Acoustic Signature's WOW XL 'table (\$2300, review underway) and TA-1000 tonearm (\$1500) with Soundsmith Carmen moving-iron cartridge (\$799); and my ancient Thorens TD124 (typically \$1200 on eBay) with an Abis SA 1.2 tonearm (\$2100) and one of three cartridges-the Zu Denon DL-103 (\$399), or Ortofon's SPU CG 25 mono (\$999) or the Jasmine Turtle

What I discovered: The PLX-1000 sounds even more solid, detailed, and



The PLX-1000 sounds even more solid, detailed, and natural than I said it was last March. I will stake my reputation on this.

natural than I said it was last March. I will stake my reputation on this.

Think of the Chinese-made Pioneer PLX-1000—and its progenitor, the Technics SL1200M2—as the audio equivalents of a Jeep Wrangler. In fact, the SL1200 has much in common with the old Jeep CJ. The venerable Technics is a cult object worldwide for

which hundreds of aftermarket parts and upgrades are available; many of these—armboards, tonearms, damping, platter mats, etc.—will fit the PLX-1000.

IN DREAMS . . . In case you haven't noticed, I write my "Gramophone Dreams" stories for those of you who may never have owned a black disc or a turntable but are beginning to think,

<sup>5</sup> See www.stereophile.com/content/gramophone-dreams-4. The Pioneer PLX-1000 costs \$699, including tonearm and Shure M44-7 cartridge. Pioneer Electronics (USA), Inc., 1925 E. Dominguez Street, Long Beach, CA 90810. Tel: (800) 421-1404. Fax: (310) 952-2990. Web: www.pioneerelectronics.com.



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Toll Free 800.229.0644 | Phone 612.378.0543 | Fax 612.378.9024 Email info@NeedleDoctor.com | 6006 Excelsior Blvd., St. Louis Park, MN 55416 Ahhh, maybe I should haul Dad's old records up from the basement. I wonder if some of those cat-scratched albums will sound good...

I also write for that even larger group of readers who grew up playing LPs, but abandoned them not long after Tower Records switched exclusively to CDs before going out of business. Many of those audiophiles have moved on to invisible files and pocket players of extreme quality. They're the ones who've dumped their film cameras, their vintage BMWs, their automatic watches. When I get into an old Land Rover Defender with a Nikon F2 hanging off my neck, I see that look of contempt in their eyes. But contempt without reinvestigation leads to only a boring life. This is why I want to add to my Pioneer PLX-1000 review the following observations.

I wrote about this mass-market, direct-drive turntable and tonearm because I wanted to share my discovery of a sturdy new record player that could not only play sophisticated music as well as the VPIs, the Regas, and the Pro-Jects, but could also be something you'd let your brother, your mother, and your kids use. I saw it, too, as the perfect player for record collectors. Most important, it seemed to be a turntable even I could afford. And besides being semi-unbreakable, the PLX-1000 is easy to use. It's especially wonderful if you like to occasionally swap cartridges: You can have a whole row of headshells, each holding a different cartridge, all pre-aligned and ready to go—as I do (see right-hand photo). The swap made, the only adjustment then needed is of the vertical tracking force (and maybe antiskating).

**EASY WORK:** For me, mounting and aligning cartridges is like changing a car's spark plugs, but most audiophiles aren't comfortable doing the job themselves. The Pioneer PLX-1000 solves that problem. Its headshell is removable, which minimizes mishaps. To attach a new cartridge, you simply remove the headshell from the arm, position the cartridge (with stylus guard in place) over the headshell slots, and snug down the two M2.5 screws and nuts just tight enough so that, with some firm urging, you can move the cartridge slightly. Then, using needlenose pliers, slip the colored headshell leads onto their pins on the cartridge. (It's best to grasp each female connector just behind the part that slips over the corresponding pin.)

Using the overhang template in the



Above: The Shure SC35C cartridge worked well on the Pioneer. Right: premounted headshells, ready for action.

Pioneer's owner's manual—or a good ruler—you can now position the cartridge so that the distance

About Manual—or a good ruler—you work the Porent Manual—or a good ruler—you work the Porent Manual—or a good ruler—or a good

from the gasket on the headshell collet to the stylus tip measures precisely 54mm. If you have a good eye for a right angle (90°), now is the time to square up the cartridge body on the headshell-being sure to maintain that 54mm overhang. This simple procedure will get you really close to a perfect Stevenson alignment (which favors classical music because it produces the least amount of distortion in the inner grooves, classical works tending to be louder at the end than at the beginning). Having reinstalled the headshell, you'll be wise to verify this alignment with a protractor—something as solid and effective as my Dr. Feickert Analogue (\$300), or as easy and free as the one you print out from the madly addictive website Vinyl-Engine.com.

DANGEROUS WORK: When my review of the Pioneer PLX-1000 appeared, a number of readers protested that I'd let Mike Trei, my good friend and in-house "turntable guru," adjust the PLX-1000's "way loose" arm bearing. It seems that they felt that this looseness was a deal-breaking problem for the Pioneer. It was not. It's really just a problem of buying audio gear online (and is why bricks-and-mortar audio dealers must continue to be supported).

Just so's you know: High-quality, hand-assembled tonearms such as my Abis or Acoustic Signature are meticulously built and adjusted at the factory, and will likely never need further tweaking. If they do, you must send them back to the factory or the dealer for adjustment. Low-priced, mass-produced arms are another story. They're made in places where the

Shure calls
the SC35C a
"professional"
cartridge
designed to
have excellent
"tonal balance
and clarity
throughout the
audio range."



most important quality control is *not* to make the arm bearing too tight. (Some DJs *prefer* a loose arm bearing!) Mass-produced tonearms often have poorly adjusted bearings—it's why I checked the Pioneer's—and most users will never notice. When an arm bearing is too tight, your cartridge will mistrack, and may even skip or not work at all. But . . .

You, too, can quite easily adjust the PLX-1000's arm bearings—if you're brave and mechanically minded, and if you're unafraid of voiding your warranty or damaging your tonearm. (Big ifs-consider this a firm WARNING!) First, check them by holding the armtube firmly between fingers and thumb, and try to rotate it as you move it gently up and down. The arm should move with no apparent friction or play, and with no noticeable tightness. If it clicks or rocks-even a little-it needs adjusting. The Pioneer arm has two screws that are easily adjusted with a 2mm slotted screwdriver: one on top (centered on the pivot), for the vertical bearing and one on the side for the

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Art Dudley- Stereophile Magazine

Tel- +1 716-714-5710 MADE IN THE USA horizontal bearing. Adjust these screws *very* slightly—by just 1° or 2°—until there's no click, no tightness. Remember, a little loose is better than a little tight.

You can verify your efforts by adjusting the arm's counterweight until the arm floats horizontally about 1/2" above the record surface. (Do this with the stylus guard on and antiskating set to "0.") When the arm stops moving and is just floating in air, lift it slightly—say, 1/2"—and release it. The arm should move effortlessly, and *slowly* return to its position above the record surface. When it's stopped moving, turn the antiskate adjustment just slightly and watch the arm. It should begin to move freely and easily away from the center of the 'table. If neither of these things happens as I've described, the bearings are too tight. Loosen them a degree, and remember: I warned you *not* to try this!

SHURE SC35C MOVING-MAGNET **CARTRIDGE:** Over and over, I'm listening to John Coltrane's tenor-sax solo in "I Wanna Talk About You," from The Gentle Side of John Coltrane (LP, Impulse! ASH-9306-2). I keep asking myself: Have I ever heard a recorded sax sound this realistic? The tenor I hear in my room is the exact size of a real one—and I can hear it moving in front of the microphone. Is this possible? I think these thoughts because I'm using a Shure SC35C cartridge (list price \$75 but available for as little as \$35) on the Pioneer PLX-1000 (\$699), driving a Schiit Mani phono stage (\$129, review underway). Believe me, I know this is not possible—but I'm hearing what I'm hearing.

I was clear in my review of the PLX-1000 that the Shure M44-7 cartridge (included with the Pioneer) was unlikely to satisfy many audiophiles. The M44-7 is a killer at the job it was designed to do: make people feel good, keep the party going, and not break down under extreme abuse. I couldn't live with it for as long as a day.

Shure's SC35C<sup>6</sup> is currently billed as a "DJ Record Needle" on Shure's website, but it's more than that. A broadcast-quality cartridge introduced in the 1970s, the SC35C was created to be used with a BBC MP1-18 tonearm fitted to the BBC-spec Technics SP-10 turntable (see photo). Shure calls the SC35C a "professional" cartridge designed to have excellent "tonal balance and clarity throughout the audio range."

It sure as hell does. I've been using



The BBC's broadcastquality record player featured a Technics SP-10 turntable.

the SC35C for about six weeks now, and it does so many things so well that it feels like one of the best

entry-level audiophile cartridges I now know of. Depending on your taste, many of you might prefer it to the Ortofon 2M Red (I do), the lowerpriced Grados (I do), the Dynavector 10x5 (maybe yes, maybe no), or my old-school "friend with benefits," the Denon DL-103 (sometimes yes, sometimes no). The only certainty here is this: Like the PLX-1000, this totally overlooked, built-like-a-truck sleeper of a hot-rod cartridge is a budget force to be reckoned with. It's of relatively low compliance for a moving-magnet design, and sounds best tracking at 4.5gm—which I promise will not harm your records, but will keep surface noise and groove misbehavior to a minimum.

Analog maven Phillip Holmes, of Mockingbird Distribution, hipped me to the SC35C's giant-killer potential. He urged me to try it on the Abis SA 1.2 tonearm, which I did. (I know you won't believe me if I tell you how good it sounded, so I won't.) Blogs and cartridge forums fanned my curiosity about the SC35C to the boiling point. I had to try it.

I bought my SC35C, with standard "Black Label" stylus, for \$34.95 from Amazon. Holmes said he liked the N35X stylus—which, so far, seems the best all-around choice. On eBay, I bought a vintage NOS SS35C stylus, which a few forum posters claimed was the best, and which I found perhaps the smoothest-, most-refined sounding of the three.

I used the SC35C with a wide variety of phono stages, beginning with the Schiit Mani (\$129) and going all the way up to the extraordinary April Sound GB-1 (\$3000). With every upgrade, it sounded better.

A word of caution: The SC35C's out-

put of 5mV could overload some higher-gain moving-magnet phono stages, and its inductance of 425mH could make it sound bright (or rolled off) driving some phono networks—especially avoid RIAA circuits using 12AX7 tubes.

The Shure SC35C plays opera: Instead of "Turn down that screeching!," it will make you feel like turning the volume *up*. Highs are surprisingly smooth and *ridiculously* grain free—especially with the Whitelabel SS35C and

N35X styli. The standard SS35C stylus sounded very good, but a little harder and less refined than the others. The sound quality of all Shure cartridges is defined by the choice of stylus. Therefore, I look forward to trying the SC35C with Shure's N70EJ, a 0.4 by 0.7mil elliptical diamond stylus; or the N75HE, a nude 0.2 by 0.7mil hyperelliptical stylus. Both will track at 1.5gm, and probably sound like my old Supex 900: fast, lively, and highly detailed.

The SC35C plays classical: I played Manuel de Falla's *El Amor Brujo*, in a recording by Ernest Ansermet and the Suisse Romande Orchestra and mezzo-soprano Marina de Gabarain (LP, London STS-15014)—the SC35C did an exceptional job of sorting out this complex, superdynamic work.

The SC35C plays Bootsy's Rubber Band: Specifically, *This Boot Is Made for Fonk-N* (LP, Warner Bros. BSK 3295), and in such a way that I thought, *It may cause high butt pleasures*. This classic funk LP sounded better than I have ever heard it.

FINALLY . . . All you need to understand is this: The Pioneer PLX-1000 turntable and tonearm, with Shure SC35C cartridge and Schiit Mani phono stage, play music *unbelievably* well—and cost under \$900 total. In high-end audio terms, that's virtually free. I have owned a \$30,000 turntable, a \$30,000 cartridge, and a \$30,000 phono stage with a \$10,000 step-up transformer. But today, I could live the rest of my music-loving, record-collecting life quite happily with this addicting \$900 front end. ■

-Herb Reichert

stereophile.com • July 2015

<sup>6</sup> The Shure SC35C lists for \$75. Shure Inc., 5800 W. Touhy Avenue, Niles, IL 60714-4608. Tel: (800) 257-4873, (847) 600-2000. Fax: (847) 600-1212. Web: www.shure.com.



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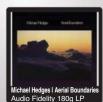






















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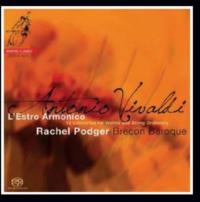
#### CLASSICAL ROCK / POP JAZZ

# RECORD REVIEWS •

t's no big secret that classical music is in trouble. At a time when selling a few hundred CDs will land you squarely in the upper reaches of the classical music chart, and the venerable New York Philharmonic faces an unsettled future in terms of its endowment, future conductor and hall renovation, many say that what the genre most lacks are genuine shining stars. It's been a long time since maestros like Leonard Bernstein or Georg Solti trod the boards, or a brilliant instrumentalist like Jacqueline du Pré became a celebrity and attracted the attention of a larger public that then might actually buy a record or attend a concert. In 2015, building an audience is classical music's central dilemma—so having a dominant player like baroque violinist Rachel Podger is a much-needed development.

Her recordings have won numerous prestigious awards, including Diapasons d'Or (for Telemann's 12 Fantasies for Solo Violin, and for Vivaldi's 12 violin concertos, La Stravaganza) and a Gramophone Baroque Instrumental Award (for *La Stravaganza*). She is also the artistic director of her own festival, the Brecon Baroque Festival; the annual four-day event, created in 2006, features her ensemble, Breton Baroque, which is heard here in another program of Vivaldi: the 12 concertos collected and published in 1711 by an Amsterdam publisher under the title L'Estro Armonico (which means, roughly, "musical rapture"). Often cited as the first examples of Vivaldi's genius to break through to the larger world, these dozen concertos for one, two, or four violins, with cello and continuo, were influential in their time-they were transcribed by J.S. Bach—and have remained delights ever since. Lively in the extreme, they demand virtuosic interplay to come to full fruition. According to AllMusic. com, they were "among the favorites of the groups that really kicked off the Baroque music revival in the 1950s

EDITOR'S PICK
RECORDING
OF THE MONTH



#### VIVALDI L'Estro Armonico: 12 Concertos for Violins, Op.3

Rachel Podger, Bojan Cicic, Johannes Pramsohler, violin; Brecon Baroque, Rachel Podger Channel Classics CCS SA 36515 (2 SACD/ CDs). 2015. Jonathan Freeman-Attwood, prod.; Jared Sacks, eng.; Ernst Coutinho, asst. eng. DDD. TT: 96:54 PERFORMANCE

and 1960s, and no stereophile [!] living room was complete without a set."

The other nagging problem faced by classical music 15 years into the new century is that much of the general public, especially the *übercritical* younger portion of which has been raised on the there-and-gone, instant-gratification world of the Internet, associates it with slow programs of overlong, unchanging musical works that take too long to get to the point.

Here, Podger and her superb cohorts emphatically put the lie to how boring classical music must be. They also debunk the long-held notion that Vivaldi was a master (like many composers, including Handel) of cannibalizing himself, in essence writing the same concerto over and over again. The variety of melodic inventiveness

in L'Estro Armonico is dazzlingly original. As is usually the case with the Italian master, the tempos are sprightly, almost fizzy in spots. Under Podger's active intelligence and inspiring vision, rhythmic energy is always the center of these performances, as she and her ensemble fly through the fast bits, assaying each ornament with dramatic flair. In some ways, the old, oversimplified adages about playing Vivaldi's music remain true: it's best to dig in and go. And yet, in the slow movements—as in the charming melodic figure played by Podger in the short Largo of Concerto 5-every long line is given time to rise and expand like a mysterious scent filling a room. Fantastic moments abound. The intense precision and taut exuberance among the soloists in the Adagio of 2 are breathtaking. The lively stabs and feints between the solo violins in the Allegro of 8, and its overall interweaving of string parts, has an invigorating beauty. And the finale of Concerto 12 has a wondrous, simple, childlike glee amid its scampering tempos and jaunty allegro.

In her liner note, Podger calls these works "wonderfully entertaining," and says that, in Vivaldi, "raw energy is regularly the order of the day"—she's especially appreciative

of the "rapid acrobatics passed between the various configurations of soloists." This is intense, ultramelodic chamber music with the brisk tempos to please speed-metal fans, and enough complexity of texture and joyous effervescence to tempt young ears and quicken the beat of even the most jaded classical heart.

Recorded in St. John the Evangelist Church, in London, this SACD/CD has unsurpassed immediacy and presence in the stereo DSD tracks, (I didn't test the 5.1-channel layer), and the tonal colors are beautifully and accurately captured. I loved the balanced depth of the images of the soloists and the accompanying ensemble. *Stereophile* editor John Atkinson's verdict: "a paradigm of modern classical recording."—Robert Baird

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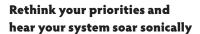
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#### CLASSICAL



MOZART Violin Concertos 1 & 5, K.207 & 219

With: Sinfonia Concertante for Violin & Viola, K.364 (320d)

Vilde Frang, violin; Maxim Rysanov, viola; Arcangelo, Jonathan Cohen

Warner Classics 2564627677 (CD). 2015. Stephen Johns, prod.; Philip Hobbs, eng. DDD. TT: 77:24

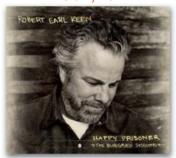
PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

The slight clash of styles heard here is more interesting than sinful or weird. Jonathan Cohen's band, Arcangelo, 27 strong, is a period group, and without being dry, their playing is direct and relatively vibrato free. Thirty-yearold Norwegian Vilde Frang is a fine romantic violinist, no doubt about it, and this CD is filled with vitality, personality, and zip. This works well in Mozart's Concerto 1, a perky, unassuming piece played here at a fine clip and a light touch, even with a strong vibrato lurking around the corner. Frang plays enthusiastically, and with a bit more depth, in the composer's last concerto. She's exciting and extroverted in the final, "Turkish" movement, and Arcangelo's cellos and basses, rapping their bows on their strings, ensure a good time.

Oddly, the problem is *not* baroque/ classical vs romantic practice. In the grandly conceived K.364 for violin, viola and orchestra, we find a more mature Mozart, and I fear that here violist Maxim Rysanov walks away with the honors. After a glorious buildup by Cohen and Arcangelo, Frang's bright tone and dreamy playing are undercut whenever Rysanov must echo her; his phrasing may be similar, but it's delivered with different intent-more gravitas. The contrast shows up again in the last, wonderfully upbeat movement, where his bow strokes simply have more profundity than hers. It's a tough thing to describe, but you'll hear it. Frang's recorded competition is Isaac Stern, Heifetz, Szeryng, Mutter, and a half dozen other heavy hitters. She's not quite there.-Robert Levine

#### ROCK/POP



ROBERT EARL KEEN Happy Prisoner: The Bluegrass Sessions

Dualtone 80302-01685-27 (CD). 2015. Lloyd Maines, prod., eng.; Robert Earl Keen, Pat Manske, engs. AAD.? TT: 51:55

PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

Back in the mid-1990s, when first making a name for herself, Alison Krauss famously said, "In our type of music, there's not any money to be lost." But thanks to Krauss and others, these days bluegrass is flourishing, at its best maintaining its soul, purity, and respect for tradition, often celebrating the work of the genre's groundbreakers.

Robert Earl Keen, the feisty Texas songwriter best known for penning such evergreens as "Merry Christmas from the Family" and the oft-covered "The Road Goes On Forever," puts his distinct Americana spin on bluegrass with this loving tribute. With an A-list of players—including Nickel Creek alum fiddler Sara Watkins, guitarist/ banjo whiz Danny Barnes (Bad Livers), and bassist and longtime Keen compadre Bill Whitbeck-Keen deftly remakes songs by such bluegrass legends as Flatt and Scruggs, A.P. Carter, Bill Monroe, Carter Stanley, and the omnipresent Public Domain. But even Richard Thompson joins the party as Keen turns in a revved-up, twangdriven version of Thompson's "1952 Vincent Black Lightning," a love song to a motorcycle that fits perfectly with the other hot-blooded bluegrass excursions on Happy Prisoner. Bluegrass icon Peter Rowan offers a lovely spoken intro to "Walls of Time," a high-lonesome song he cowrote with Monroe

"When I listen to music, I want the sound to wash over me like a wave," Keen writes in the album notes. "So that's what we did here. We played bluegrass in a tiny room until it shook and the music washed over us." And wash over it does. Brilliantly.—David Sokol



SONGHOY BLUES
Music in Exile

Atlantic 549323-2 (CD). 2015. Nick Zinner, prod.; Manjul, Antoine Halet, engs. DDD? TT: 39:43

PERFORMANCE \*\*\*\*
SONICS \*\*\*\*

There hasn't been a more galvanizing demonstration of "desert blues" than this debut album from the quartet Songhoy Blues, the title of which refers to the musicians' displacement from their native northern Mali by Islamic extremists. The band formed in the Malian capital of Bamako, with three unrelated Muslim northerners surnamed Touré singing and playing guitars and bass, and a Christian southerner on drums. The name Songhoy designates the Tourés' ethno-linguistic group (often spelled Songhai), to which Ali Farka Touré also belonged. Produced by guitarist/keyboardist Nick Zinner, of the New York indierock trio Yeah Yeah Yeahs-who also provides instrumental and vocal help as well-Music in Exile consists of onechord grooves rather than 12-bar blues, but it's drenched in blues feeling and charged with propulsive energy.

The opening track, "Soubour"—borrowed from the various-artist Malian-Western collaborative album Africa Express Presents: Maison des Jeunes (2013)—grooves over a bass vamp similar to the one on Albert King's "Born Under a Bad Sign," with guitars grinding out barbed-wire blues licks. "Irganda" likewise rocks to a backbeat, as do "Sekou Oumarou," "Nick," and "Petit Metier," lending these tracks a Western cast. The last four tracks are relatively laid-back, ending the album on a protracted mellow note.

Lead singer Aliou Touré sings agreeably enough about the environment, ethnic harmony, patriotism, and patience, or so the liner notes tell us, but in the absence of translations of the lyrics, the focus is on the instrumental work, especially the incendiary guitars.—Larry Birnbaum

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### CHANDLER TRAVIS & DAVID GREENBERGER

Bocce & Bourbon: The Comfortable Songs of Chandler Travis & David Greenberger

Iddy Biddy 7680 (CD). 2015. Chandler Travis, prod.; Chris Blood, Ducky Carlisle, others, engs. ADD.

PERFORMANCE \*\*\*

Chandler Travis has been the eccentric bard of eastern Massachusetts for a run of 45-plus years, during which he's fronted numerous bands ranging from the Incredible Casuals to the Chandler Travis Philharmonic. Travis has established himself as a songwriter who can rock your socks off, head into Sun Rastyle space-jazz territory, then deliver an impossibly tender ballad. His vision is unique—it's tempting to think of him as a songwriting lone wolf—but on this release he reveals a subset of material written with David Greenberger.

The album is arranged as a collection of songs, and Travis uses six different lineups. The Chandler Travis Three-O, a trio/quartet, cut the beautiful "Air, Running Backwards," "January," and "Make the Small Things Pretty." The Chandler Travis band appears on "All in a Day" (carried by Mike Peipman on trumpet), "Waters of the World," and the magnificent love song "(You & Me) Pushin' Up Daisies." It's not all that comfortable when Travis and Rabbit Rabbit rock into "I Bit the Hand that Fed Myself," or the postpunk Catbirds peel out on "The Crutch of Music," or the Incredible Casuals-the pride of the Wellfleet Beachcomber bar-roar through "She Laughed" with NRBQ's Johnny Spampinato on guitar.

For the most part, though, these are beautifully crafted songs with strong hooks and memorable melodies, and they're best when delivered by the Philharmonic: "By the Way" (great arco bass from John Clark), "The Strongman of North America," and "Baby Come Get Your Cat."—John Swenson



#### WAXAHATCHEE Ivy Tripp

Merge MRG549 (CD). 2015. Katie Crutchfield, Keith Spencer, prods.; Kyle Gilbride, prod., eng. AAD? TT: 38:09

PERFORMANCE ★★★★★
SONICS ★★★★

You'd be forgiven if, after the first song, you yanked Katie Crutchfield's third album effort (under the somewhat inscrutable but enticing moniker Waxahatchee) from your CD player and gave it the heave-ho. "Breathless" is a mélange of enough amateurish drones, hums, and amp buzz to make you bolt for the refuge of the nearest Rick Wakeman album, and is lent a nails-on-blackboard quality by a singsongy, atonal la-la-la vocal from Crutchfield guaranteed to wake the children, or at least give them nightmares. Even for an indie-rock aficionado such as yours truly, it's a bit much.

Persevere, though, and *Ivy Tripp* does, for the most part, deliver. There's a distinctive Liz Phair quality to shambling rockers like the buzzing, garagey pop of "Under a Rock," and the melancholic ballad of fractured love that is "Air." Elsewhere, one detects echoes of Patti Smith ("Summer of Love" has a dreamy, "Dancing Barefoot" quality), and even alt-country upstarts Those Darlins (twangy gem "The Dirt"), as Crutchfield builds on the estimable foundation she laid in her acclaimed 2013 debut, *Cerulean Salt*.

The sound, though, remains problematic. It's unyieldingly midrangey—even shrill in places—and lacks much in the way of nuance. For example, Crutchfield ushers in some gorgeous harmonies at times, but the mix renders them fairly lifeless, like last-minute afterthoughts. Sure, there's intimacy here, but of a nagging, tugging sort, offering neither a caress nor a come-hither quality. Given the promise of its predecessors, I won't write her off this early.—Fred Mills



**DWIGHT YOAKAM** Second Hand Heart

Via/Reprise 548832-2 (CD). 2015. Dwight Yoakam, prod.; Chris Lord-Alge, prod., eng.; Stephen Marcussen, Marc DeSisto, others, engs. AAD.? TT: 40:50 (52:33 w/bonus tracks)

PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

It's been nearly 30 years since Dwight Yoakam exploded onto the country charts, one of the freshmen in the new-traditionalist class of 1986 that included Steve Earle, Randy Travis, and Lyle Lovett.

More than any of his luminous classmates, Yoakam has stayed true to his original sound. That's all the more remarkable given how the world has changed around him, and it's what makes this album so good. From the first guitar strums of "In Another World," Second Hand Heart sounds big without being overproduced. And that bigness, built around plenty of electric and acoustic guitars, keyboards, and a thumping rhythm section, is sustained throughout. Meanwhile, Yoakam hasn't lost an ounce of the twang and authenticity that have always informed his singing and songwriting.

The title song, dating back to 2009, is vintage Yoakam ca "Ain't That Lonely Yet," full of heart and heartache: "She said when I trusted love, I dreamed in color too." "Off Your Mind," with its 2015 copyright, sounds like a long-lost Buck Owens chestnut. Then there're the jangly, Byrdsy "Believe" and a remake of "Man of Constant Sorrow."

For diehard Yoakam fans, an expanded edition (available from Target) has three fine bonus tracks. Where the album version of "The Big Time" sounds as if it could've been written for latter-day Elvis Presley, the strippeddown demo, produced in 1989 by Pete Anderson, has a purer rockabilly feel. Back on Reprise, where he recorded most of his greatest hits, Yoakam sounds right at home throughout Second Hand Heart.—David Sokol

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#### JACK DEJOHNETTE Made in Chicago: Live at the Chicago Jazz Festival

Jack DeJohnette, drums; Henry Threadgill, Roscoe Mitchell, reeds; Muhal Richard Abrams, piano; Larry Gray, cello, bass ECM 2392 (CD). 2015. Jack DeJohnette, Dave Love, prods.; Martin Walters, eng. DDD? TT: 77:35

PERFORMANCE \*\*\*

Jack DeJohnette is best known as the nuanced drummer of Keith Jarrett's Standards Trio. But his roots in avantgarde jazz go back to the early 1960s. In his hometown of Chicago, he played with Muhal Richard Abrams, Henry Threadgill, and Roscoe Mitchell before they became major figures of the free-jazz movement. At the Chicago Jazz Festival in 2013, these old partners in crime reunited.

Each is now in his 70s except for Abrams, who is 82. They approach music with the awe of youth. The first and last pieces here, Mitchell's "Chant" and the group improvisation "Ten Minutes," are (to no one's surprise) wild, seething ceremonies. Abrams's piano floods and crashes. Mitchell's soprano saxophone shrieks in an ecstasy of transcendence. No jazz stays new forever, but some is permanently revolutionary.

The surprises are the quiet songs. Abrams's "Jack 5" is patiently arrayed in space. Threadgill, on alto saxophone, assembles a unique, complete design based on randomness and chance. Mitchell's "This" is about the lush, commingled sonorities of Threadgill's bass flute and Larry Gray's bowed bass. It is slow and rapt. DeJohnette's inner stirrings are ominous. Perhaps the central paradox of this music is that it is deeply collaborative, even though each player sounds as if he is always soloing. Five individual voices aggregate to an ultimate oneness significant beyond themselves.

The recording, made at an outdoor band shell before a crowd of 10,000, is just good enough to capture the passion.

—Thomas Conrad



#### CHARLES LLOYD Wild Man Dance

Charles Lloyd, tenor saxophone; Sokratis Sinopoulos, Iyra; Gerald Clayton, piano; Miklos Lucaks, cymbalom; Joe Sanders, bass; Gerald Cleaver, drums

Blue Note B002243302 (CD). 2015. Charles Lloyd, Dorothy Darr, prods.; Piotr Papier, eng. DDD. TT: 74:25

PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

Many firsts here: Charles Lloyd's first long-form composition. His first recording with a new quartet. His first with cymbalom and lyra. His first for Blue Note Records in 30 years. *Wild Man Dance*, a suite in six movements, was commissioned by the Jazztopad Festival, in Wroclaw, Poland. This recording comes from its premiere performance, in Wroclaw, in November 2013.

Lloyd has never gotten enough credit as a composer. The six themes here are spare, inevitable melodies. What's new is how these related motifs provoke an unbroken, 74-minute outpouring. Part 1, "Flying Over the Odra Valley," soars. It is an aerial perspective specific to a river in Poland, but universal. Lloyd has said that all his music is a "search for the liberation of the soul." "Gardner" and "Lark" open with luminous strands of piano and a lyra's sweet whining. Each Lloyd entrance is a dramatic announcement and summons from which he whirls into turbulence, striving toward grace.

The suite is never anything so simple as a single story. Lloyd never "solos." He becomes a voice among vivid, diverse voices, singing vast, spontaneous chorales. The ensemble surges, contracts, gathers itself, again ascends. Wild Man Dance is one arc, a larger mission than Lloyd has ever undertaken in one creative act. It is also a breakout album for pianist Gerald Clayton, and a revelation of colors and energies new to jazz, from Sokratis Sinopoulos (lyra) and Miklos Lucaks (cymbalom). Early vote: Jazz Album of the Year.

-Thomas Conrad



RYAN TRUESDELL Lines of Color—Gil Evans Project: Live at Jazz Standard

Ryan Truesdell, conductor; orchestra with varied combinations of 25 musicians
Artist Share/Blue Note ASBN 0133 (CD). 2015. Ryan Truesdell, Dave Rivello, prods.; Geoff Countryman, James Farber, Tyler McDiarmid, engs. DAD. TT: 61:42

PERFORMANCE \*\*\*\*

In 2012, Ryan Truesdell stunned the jazz world with *Centennial: Newly Discovered Works of Gil Evans*. It contained previously unrecorded Evans compositions and arrangements, performed by an orchestra of A-list New York players. It was all over the major 2012 jazz polls.

The sequel has arrived. Most of the charts are new to the world; three are from classic Evans albums. There is nothing quite as mind-blowing as *Centennial's* "Punjab" and "Barbara Song," unearthed masterworks from Evans's greatest period, the 1960s. Six of the 11 charts on *Lines of Color* were written in the 1940s for the Claude Thornhill orchestra.

But the new album contains its own jewels and revelations. A medley arranged for Thornhill in 1946 ("Easy Living"/"Everything Happens to Me"/"Moon Dreams") is an invaluable early document of Evans's signature stylistic elements: intricate inner detail, quietly startling harmonic and rhythmic transitions, organic counterlines, blends of pastel colors. In its graceful glide, it is sublime. There is an epic, nine-minute remake of "Time of the Barracudas," from 1964. In their new responses to Evans's music, Gilkes and tenor saxophonist Donny McCaslin spill their guts.

Truesdell's bold decision to record this challenging material live is validated. The recording comes in close on the orchestra, but also captures the excitement of the night and the crowd, those fortunate ones who were there.

-Thomas Conrad

# MANUFACTURERS' COMMENTS

THIS ISSUE: Aurender, SAT, Bel Canto, Music Hall, and Pear Audio Analogue comment on our reviews of their products.

#### **Aurender Flow**

Editor:

Team Aurender warmly thanks John Atkinson for his thoughtful and concise assessment of the Aurender Flow (June 2015, p.113). The Flow is not atypical of today's offerings of D/A headphone amplifiers, and John captured the essence of this unique product admirably.

The Flow was designed with the headphone audiophile in mind, providing an uncompromised feature set and exceptional audio performance. We envisioned it being used much as John did in his review, sourced via a laptop, iPhone, or iPad. Many business travelers carry the latest ultralight laptops, such as the MacBook Air, but unfortunately, these devices have minimal hard-drive capacity. The Flow elegantly solves this problem by allowing for the installation of an mSATA drive of up to 1TB, which can accommodate a large music library without burdening your laptop. (One businessman reported that, in addition to his music, he also uploaded a PowerPoint file for a business trip, and used the Flow as his source in a presentation at the meeting.)

Another unique use for the Flow: When tethered to any Aurender Reference Music Server with the supplied USB cable, the Flow functions as a full-featured D/A headphone amplifier. There's even a volume control that appears on the Aurender Conductor App, to provide remote adjustment of gain!

To further clarify a point raised by JA regarding transport-button placement on the Flow: When the Flow is oriented vertically and placed on a flat surface, as perhaps it might be when sitting next to your laptop computer, the third button from the top accesses previous tracks, the next button down controls Play/Pause, and the last button advances tracks—mirroring the directional arrows on your keyboard. We feel this to be the most logical and intuitive layout for these transport functions when the Flow is used in a vertical position.

One other detail worth mentioning is the fact that when headphones are plugged in, the volume level is muted to –90dB, regardless of where the master volume control may be set. This and other unique features and functions of

the Flow are representative of the attention to detail lavished on each and every Aurender product.

Thanks to *Stereophile* for making its readership aware of the Flow, and to JA, who put it through its paces. Bravo!

Harry Lee, Director Aurender, Smart Audio Division, TVLogic America Co.

#### **Swedish Analog Technologies**

Editor:

I am very pleasantly surprised to read that the SAT has managed to generate a "sonic seismic shift" in Michael Fremer's system. I knew the SAT was a mighty piece of equipment, but didn't expect it would be so powerful as to knock out this particularly experienced reviewer.

I want to call attention to the professionalism and good cheer Mr. Fremer exhibited during the review process, especially during some of the challenges he needed to overcome while setting up the arm, as well as for being open to listening to newcomers to this industry (like me) who are eager to share our creations. In return, the SAT arm has had the honor of revealing things he has never heard before, causing laughter and smiles of delight during his long, late-night listening sessions.

My hope is that Mr. Fremer's review of the SAT pickup arm will help many audiophiles boost the performance of their systems and their musical enjoyment by placing the appropriate importance on the role that a high-performance arm plays in their system. I expect it will also lead to a deeper appreciation of the amazing quality that the vinyl playback system has when the components are properly engineered and manufactured.

The SAT was designed as a precision mechanical instrument, not as an audio product. It is my conviction that this is the only way to achieve the ultimate level of performance.

Part of my mission in creating SAT as a vinyl playback specialist brand is to raise the tonearm to the place it deserves: as a profoundly significant contributor to the overall performance of the analog system. Following this same philosophy and design principle, I will continue to develop more exceptional products so that even more people can experience this level of

analog playback.

During the period of research and development, my internal design brief was to build a proper tonearm from the ground up. I am flattered to know that Mr. Fremer believes it to be the best in the world.

Marc Gomez SAT—Swedish Analog Technologies

#### **Bel Canto Black System**

Editor:

We would like to express our sincere thanks to John Atkinson and Michael Fremer for the high degree of professionalism exhibited throughout the review process of the Bel Canto Black system. Our hats are off to both of you for rendering the process quick and efficient. The resulting review reflects an honest assessment of a sophisticated and unique audio system, and reinforces the value of quality journalism to our industry. The review says it all and we are pleased that Michael enjoyed music played from his prized analog LPs and digital sources through our Black system expressing his unprecedented enjoyment of CD audio! Musical enjoyment is the foundation of the Bel Canto Black system.

John Stronczer Founder, Bel Canto Design, Ltd.

#### **Creek Evolution 100A**

Editor:

Sorry to start this response on a somber note, but I feel I have to say a few words about the passing of Bob Reina.

Bob was a loving husband and father, a multitalented and gifted musician, an excellent writer, and a good friend. He had this wonderful knack of organizing events and cajoling people (even me) to attend. I'll miss his phone calls, our talks about food and the industry, and his wine classes, which miraculously turned jollier as the evening progressed.

His death diminishes me.

Now, with Bob gone, Stephen Mejias's recent move to the Dark Side, and Sam Tellig's retirement and pending admission to the Connecticut Home for the Bewildered, I am left to contend with Herb Reichert.

I have known Herb for many years. I have a faint memory of Herb and that other hack, Mike Trei, driving a golf cart in beautiful Moneta, Virginia. A dealer of mine, Steve Davis, had invited us for a weekend of golf and hi-fi. If I remember correctly, Herb and Mike, both on the wagon, were driving a large keg of beer *in* the wagon to us parched golfers. It was a refreshing addition to the peach moonshine the rest of us had been drinking since 7am.

Now to Herb's review. Well, he can write, which is a rare talent for a hi-fi reviewer, but I take umbrage with one of the things expressed. What's this nonsense about the phono board's lack of openness? Was it the "current-hungry Magnepans," or whatever shitty turntable and cartridge he was using? I installed that board before giving him the amp, and it sounded perfect on my Music Hall 11.1 and my Linn Sondek turntables, so I guess something else was going on.

I agree with John Atkinson, who said, "I was particularly impressed by the \$200 moving-magnet module, so it is a puzzle why HR felt it to be the 100A's weak point."

The day before I wrote this, I demoed the Creek 100A with the same phono board and a Music Hall 5.1LE turntable at the AXPONA show in Chicago, and the system sang all weekend.

Maybe Herb does need to get a Linn LP12 back in his system. (It's funny, I have a spare Linn doing nothing. If he only he had liked that phono section . . .)

Over all, Herb wrote a really good review. He understands the personality of the amp. He said, "It consistently reproduced the recordings I love in a straightforward, exciting, satisfying way that made their invention and humanity easily accessible. In fact, the 100A's greatest virtue was how consistently and vigorously it exposed the intentions of the artists behind the music."

Couldn't have said it better myself.

Roy Hall Music Hall

#### **Pear Audio Blue Kid Thomas & Cornet 2**Editor:

We want to thank *Stereophile* and Art Dudley for his extensive and insightful review, and for his many compliments and high praise of Tom Fletcher's final designs, the Kid Howard turntable and Cornet 2 tonearm. We are proud that a reviewer with Art Dudley's keen ears heard what we hear: "a soundfield that was engagingly, involvingly big."

Tom Fletcher wanted his turntables to create extraordinary musical experiences without extreme price tags. We are pleased that Art recognized that the Kid Howard was "forceful and present, with especially good touch and texture in the sounds of double basses." Because Tom believed music had to be delivered in a dynamic and present way to move the listener. And to be moved by the music—isn't that why we listen to music?

Tom Fletcher left Nottingham Analogue more than 10 years ago, knowing that, in order to further improve his turntables, he had to start over. After leaving Nottingham Analogue, he created just two new turntable designs, for Fletcher Audio and Pear Audio Blue. Unrestricted by previous designs, Tom set out to create superior turntables and tonearms. Even though his last designs resemble his older designs, they are in fact full of innovations—not revolutions but evolutions. His philosophy was to create the perfect marriage of materials, and a turntable that is sonically in phasewhere the whole is worth more than the sum of its parts.

We are therefore pleased that the Kid Howard/Cornet 2 combo was able to give Art moments that were "simply incandescent"; that he felt that the turntable was able to reproduce many different kinds of music; that "the Pear pulled tons of tone from that groove"; and because we believe that a good turntable/tonearm should be able to extract the max from the grooves of old vinyl, as most of us have many non-audiophile albums.

We feel it's important to clarify two facts:

- 1) Tom's innovative speed enhancer—the little piece that touches the underside of the platter—can be adjusted for speed adjustment.
- 2) In order for any turntable to be able to perform at its absolute best, it is imperative that the right cartridge is picked to get the optimum tonearm/cartridge compatibility. We urge everyone to follow their dealers' recommendations when picking a cartridge. The Cornet 2 tonearm will fit very well with most cartridges, but in order to extract the maximum performance and get the best, full frequency response from your turntable, some cartridges will of course be a better fit than others.

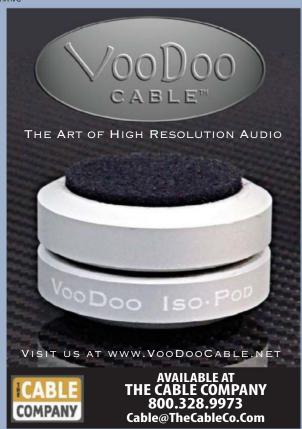
We'd once again like to thank Art for his review and his high praise of the Kid Howard/Cornet 2. And we would like to invite interested music lovers to bring their favorite albums to their local Pear Audio Blue dealer and experience musical involvement with a Pear Audio Blue turntable.

Peter Mezek Pear Audio Analogue



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# AURAL BY ROBERT BAIRD ROBERT

"So please go slowly
I can feel you move my way
All the darkness
It will fade away
Until the light of day
You own the stars tonight"
SUSANNE SUNDFOR—FROM "SLOWLY"

### Soul Love

f there's anything to hold against electronic music, it's the lack of warmth and soul. Even the name exudes a certain chill. That and the genre's lack of much actual songwriting have produced few masterpieces that will have life off the dance floor. Susanne Sundfør's *Ten Love Songs* may change all that.

Reached at her home in Norway, Sundfør says of her dance-floor success, "Sometimes, dance music can be a bit repetitive to me. But's that's also a question of context. I've been reading this book by Simon Reynolds called *Energy Flash [:A Journey through Rave Music and Dance Culture]*. It's about house music, and the writer is saying house music started because of Ecstasy. Special genres are made for special situations. If I'm at home and I want to listen to music that intellectually

inspires me, I don't put on a dance record. And I will put on a jazz song, because that's what I grew up with."

Not well known in the US, where Ten Love Songs has only been released as a download (though the LP and CD are available as imports), Sundfør is a bona-fide star in Norway. With her lustrous, gliding soprano, often bathed in reverb, and solid grounding in composing, arranging and producing music, Sundfør brings a towering human instrument, not to mention genuine craft, to a genre that too often lacks both. The granddaughter of noted linguist Kjell Aartun, Sundfør, who also plays keyboards, has seen her last two studio albums, The Brothel (2010) and The Silicone Veil (2012), each go to No.1 in Norway. In 2013, she collaborated with French electronic band M83 on the soundtrack to the Tom Cruise sci-fi film Oblivion. She cut a track, "Running to the Sea," with Norwegian electronic-music duo Röyksopp that also hit No.1 in Norway and appeared on Röyksopp's album *The* Inevitable End. What's unusual about Sundfør is that while some of her music, such as "Kamikaze" on the new record, is clearly intended for the dance floor, other tunes-eg, the ballad "Darlings"—are in a more pop vein slightly reminiscent of the great Scandinavian tradition of ABBA. Call it art pop, experimental pop, or chamber pop, but a tune like the 10-minute "Memorial" which mixes synths, violins, and solo piano with lyrics about an ex-lover taking off her dress, and is decidedly *not* dance music, reveals the depth and breadth of Sundfør's musical ambitions.

"When you're an artist, you've got to follow your own compass. I really appreciate a solid production and a really good song. Like Beck's latest album. It's really good to listen to on headphones, because you can hear how well it's been mixed and produced, and also, the songs are amazing. But I also think Taylor Swift has some really good songs. They're very well-written pop songs, and she writes good lyrics as well. Pop music isn't that intellectual, but that's not the point



of it either. It's supposed to go straight to your heart. It's not supposed to go to your brain. I think it's important to have an open mind."

With Ten Love Songs Sundfør has also stepped into the producer's role, although she had help: from composer Lars Horntveth, for "Silencer"; from Mellowdrone's Jonathan Bates, best known lately for his solo project Big Black Delta, for "Accelerate"; and from Anthony Gonzalez, of M83, for "Memorial." Recording her huge voice, long held notes, and ghostly ascents proved challenges Sundfør thinks she's solved.

"I feel like there's a big difference in how my vocal comes through on this album. Some of it has to do with the

mixing, but a lot has to do with the microphone as well, a Neumann 563, that I tried with Röyksopp first and I thought it was so good, I bought one myself. It's the first microphone I felt really captured the timbre of my voice, and also the frequencies where my voice is best."



Sitting in the producer's chair for *Ten Love Songs* also gave Sundfør a new perspective on recorded sound—though her albums have always been a sonic cut above the electronic rabble.

vocals get as much space as possible."

"You've got to philosophize or think a lot about how you want your songs to sound, how you want to present them, and what you want to emphasize. Also what you want to be challenging for the listener and what you want to be pleasurable. To me, the sound is just as important as melody. I wouldn't say that I'm into hi-fi, but I want it to sound up to its fullest potential. That's my goal when I record, and when I produce."

Music critic Robert Baird (robert.baird@sorc.com) welcomes a vibrant discourse on music and musicians.





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